STATE WATER RESOURCES CONTROL BOARD
WATER QUALITY ORDER NO. XXXX-XXXX-DWQ
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT NO. CASXXXXXX

WASTE DISCHARGE REQUIREMENTS (WDRs) FOR STORM WATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) (GENERAL PERMIT)

Contents

FINDINGS

The State Water Resources Control Board (State Water Board) finds that:

1. Storm water is a resource and an asset and should not be treated as a waste product. Managing rainwater and storm water at the source is a more effective and sustainable alternative to augmenting water supply, preventing impacts from flooding, mitigating storm water pollution, creating green space, and enhancing fish and wildlife habitat. California encourages alternative, innovative, multi-objective solutions to help use and protect this valuable resource, while at the same time controlling pollution due to urban runoff.

2. As human population increases, urban development creates new pollution sources and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the municipal separate storm sewer system (MS4). As a result, the runoff leaving the developed urban area is greater in pollutant load than the pre-development runoff from the same area. Also, when natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, walkways and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving developed urban area is significantly greater in runoff volume, velocity, peak flow rate, and duration than pre-development runoff from the same area. The increased volume, velocity, rate, and duration of runoff greatly accelerate the erosion of downstream natural channels. In addition, the greater the impervious cover the greater the significance of the degradation.

3. Pollutants of concern found in urban runoff include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides.

4. Trash and litter are a pervasive problem in California. Controlling trash is one of the priorities in California not only because of trash discharge prohibitions required in certain Regional Water Board Basin Plans, but also because trash and litter cause particularly major impacts on our enjoyment of California waterways. There are significant impacts on aquatic life and habitat in those waters and eventually to the global ocean ecosystem, where plastic often floats, persists in the environment for hundreds of years, if not forever, concentrates organic toxins, and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared and can ingest plastic that looks like prey, losing the ability to feed properly.

5. The State Water Board is developing a statewide policy for trash control in California's waterways. The draft Trash Policy will identify trash as a separate pollutant and establish methods to control trash pollution in waterways, statewide. Upon adoption of the draft Trash Policy, the State Water Board may re-open the Order to incorporate water body trash pollution control methods and introduce Trash Reduction Program requirements.

6. A higher percentage of impervious area correlates to a greater pollutant loading, resulting in turbid water, nutrient enrichment, bacterial contamination, organic matter loads, toxic compounds, temperature increases, and increases in trash or debris.

7. Conventional landscaping features large lawns, non-native plants, abundant irrigation, and heavy use of fertilizers, herbicides, and pesticides. It frequently requires significant mowing, blowing, trimming, and removal of plants debris. Adopting more storm water-friendly landscape practices reduces pollutants and also provides tangible water conservation, wildlife habitat, and energy saving benefits.

8. The State Water Board recognizes that this Order affects varied and diverse entities, including agencies that are required to carry out water conservation regulations, wastewater discharge regulations, and land use regulations that may implement, all or in part, provisions of this permit. The State Water Board seeks to minimize duplicate efforts and maximize resources to achieve the greatest water quality benefit; thus the State Water Board recognizes specified related regulations, cited in the body of this permit, as equivalent to implementing designated provisions of this permit.

9. When water quality impacts are considered during the planning stages of a project, new development and many redevelopment projects can more efficiently incorporate measures to protect water quality.

10. In California, urban storm water is listed as the primary source of impairment for ten percent of all rivers, ten percent of all lakes and reservoirs, and 17 percent of all estuaries (2010 Integrated Report). Although these numbers may seem low, urban areas cover just six percent of the land mass of California and so their influence is disproportionately large. Urbanization causes changes in the landscape, including increased loads of chemical pollutants, increased toxicity, changes to flow magnitude, frequency, and seasonality of various discharges, physical changes to stream, lake, or wetland habitats, changes in the energy dynamics of food webs, sunlight, and temperature; and biotic interactions between native and exotic species. In addition to surface water impacts, urbanization can alter the amount and quality of storm water that infiltrates and recharges groundwater aquifers.

11. Education and awareness programs help change human behavior with respect to reducing the amount of pollution generated from storm water sources within the Permittee's MS4 system. In addition to education, encouraging public participation in local storm water programs can lead to program improvement as well as enabling people to identify and report a pollution-causing activity, such as spotting an illicit discharge.

12. Field experience in conducting outfall surveys indicates that illicit discharges may be present at 2 to 5 percent of all outfalls at any given time. Given that pollutants are being introduced into the receiving water during dry weather, illicit discharges may have an amplified effect on water quality and biological diversity.[1] Therefore, implementation of an effective Illicit Discharge and Detection Elimination program in

[1] Urban Stormwater Management in the United States, National Research Council, 2008

conjunction with focused wet weather monitoring, as necessary, is an essential component of an effective municipal storm water program.

13. In 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) storm water program. The Phase I program for MS4s requires operators of "medium" and "large" MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a storm water management program as a means to control polluted discharges from these MS4s.

14. A MS4 is a conveyance or system of conveyances that is: 1) owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.; 2) designed or used to collect or convey storm water (including storm drains, pipes, ditches, etc.); 3) not a combined sewer; and 4) not part of a Publicly Owned Treatment Works or sewage treatment plant.

15. On December 8, 1999, U.S. EPA promulgated Phase II storm water regulations under authority of the Clean Water Act section 402(p)(6). The Phase II Storm Water requires State Water Board to issue NPDES storm water permits to operators of Small MS4s.

16. On April 30, 2003, the State Water Board adopted Water Quality Order No. 2003-005-DWQ, NPDES General Permit CAS000004 WDRs for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit) to comply with Clean Water Act section 402(p)(6).

17. Title 40 of the Code of Federal Regulations (40 CFR) section122.26(b)(16) defines Small MS4s as those not defined as "large" or "medium" MS4s under section122.26(b)(4) or (b)(7) or designated under 40 Code of Federal Regulations section122.26(a)(1)(v). The term Small MS4s includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. (40 CFR §122.26(b)(16)(iii).) These latter subsets of Small MS4s are referred to herein as Non-traditional Small MS4s. Non-traditional Small MS4s discharge the same types of pollutants that are typically associated with urban runoff. Separate storm sewers in very discrete areas, such as individual buildings are not defined as Small MS4s.

18. Of the Small MS4s defined by federal regulations, only "Regulated Small MS4s" (also referred to as "Permittees" herein) must obtain an NPDES permit. Small MS4s are designated as Regulated Small MS4s in this Order in accordance with the criteria described in Findings 19-25.[2]

19. Under 40 Code of Federal Regulations section122.32(a)(1) all Small MS4s located within an "urbanized area" as determined by the latest Decennial Census by the Bureau of the Census (Urbanized Area) are automatically designated as Regulated Small MS4s.

[2] In addition to the designation criteria specified in this Order, the State Water Board may designate a Small MS4 as a Regulated Small MS4 in response to a petition received under 40 Code of Federal Regulations section 122.26(f). Any person may petition the State Water Board to require an NPDES permit for a discharge composed entirely of storm water that contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States. (*Id.*). The State Water Board must make a final determination on any petition within 180 days after receiving the petition. (40 CFR §123.35(c).)

20. Under 40 Code of Federal Regulations sections 122.32(a)(2) and 123.35(b) the State Water Board is directed to develop a process, as well as criteria, to designate Small MS4s located outside of an Urbanized Area as Regulated Small MS4s. These criteria are to evaluate whether a storm water discharge results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts.

21. Under guidance provided in 40 Code of Federal Regulations secton123.35(b)(1)(ii), for determining other significant water quality impacts, U.S. EPA recommends a balanced consideration of the following designation criteria on a watershed or other local basis: discharge to sensitive waters, high growth or growth potential, high population density, contiguity to an urbanized area, significant contributor of pollutants to waters of the U.S., and ineffective protection of water quality by other programs.

22. The State Water Board is required to apply the designation criteria at a minimum to all Small MS4s located outside of Urbanized Areas serving jurisdictions with a population density of at least 1,000 people per square mile and a population of at least 10,000. (40 CFR §123.35(b)(2).) The State Water Board has discretion to apply the criteria to jurisdictions with smaller population or lower density. All such jurisdictions are then Regulated Small MS4s.

23. In developing the designation criteria, the State Water Board included factors indicative of the potential to result in exceedances of water quality standards and other significant water quality impacts. The following criteria are used to designate Small MS4s outside of Urbanized Areas as Regulated Small MS4s in this General Permit.

    a. The Small MS4 has high population *and* high population density – High population means a population of 10,000 or more. High population density means a density of 1,000 residents per square mile or greater. Also to be considered in this definition is a high density created by a non-residential population, such as tourists or commuters.

    b. The Small MS4 discharges to Areas of Special Biological Significance (ASBS) as defined in the California Ocean Plan.

24. Designation of additional Small MS4s outside of Urbanized Areas as Regulated Small MS4s may be made by the Regional Water Boards on a case by case basis. Case by case determinations of designation shall be based on the potential of a Small MS4's discharges to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. Where such case by case designations have been recommended by the Regional Water Boards prior to adoption of this Order, the designated Small MS4s are listed on the relevant Attachments to the Order and the reasons for designation are laid out in the Fact Sheet. The Regional Water Boards may continue to make case by case determinations of designation

during the permit term by notification to the discharger which shall include a statement of reasons for the designation.

25. 40 Code of Federal Regulations section 123.35(b)(4) requires designation as a Regulated Small MS4 of any Small MS4 outside an Urbanized Area that contributes substantially to the pollutant loadings of a physically interconnected MS4 regulated by the NPDES storm water program. A Small MS4 is interconnected with a separately permitted MS4 if storm water that has entered the Small MS4 is allowed to flow directly into a permitted MS4. In general, if the Small MS4 discharges more than ten percent of its storm water to the permitted MS4, or its discharge makes up more than ten percent of the permitted MS4's total storm water volume, it is a significant contributor of pollutants to the permitted MS4. In specific cases, the MS4s involved or third parties may show that the ten percent threshold is inappropriate for the MS4 in question.

26. Regulated Small MS4s may seek a waiver from Phase II requirements if they meet criteria specified in 40 Code of Federal Regulations sections 122.32(c)-(e).[3] The State Water Board has additionally provided for a waiver for those communities outside of urbanized areas with a population of 20,000 or less with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. (Wat. Code, § 79505.5, subd. (a)).

27. Small MS4s face highly variable conditions both in terms of threats to water quality from their storm water discharges and resources available to manage those discharges. Therefore, one set of prescriptive requirements is not an appropriate regulatory approach for all Regulated Small MS4s. This Order distinguishes between New and Renewal Traditional Small MS4 Permittees. Additionally, this Order addresses differences between Traditional and Non-traditional Small MS4s by detailing Non-traditional Small MS4 specific provisions in Section F Non-Traditional Small MS4 Provisions. Provisions are tailored to address the diverse program structures of Non-traditional Small MS4s to allow for an appropriate regulatory approach.

28. There are variable levels of resources available to Regulated Small MS4 for public outreach and monitoring and water quality monitoring. Recognizing this, the Order gives Permittees numerous compliance options in these two program areas.

29. Renewal Traditional Small MS4s Permittees shall comply with Section E. Certain provisions within Section E contain compliance date that are past the effective date of this Order, in these cases, the Permittee shall implement its existing program until that date.

30. A Regional Water Board Executive Officer can determine that a Renewal Traditional Small MS4 Permittee's current implementation of BMPs is equally or more effective at reducing pollutant discharges than implementation of the requirements of a given subsection of this Order. As a result, the Executive Officer may require continued implementation of the Permittee's current BMPs and reporting requirements in lieu of implementation of the requirements of that subsection. An exception is all Permittees must implement post-construction and

[3] Waiver criteria also found at 40 CFR 123.35(d).

monitoring programs as specified in this Order. The Permittee may submit a request in writing to the State Water Board Executive Director for review of the Executive Officer's determination.

31. This Order modifies the existing General Permit, Order 2003-0005-DWQ by establishing the storm water management program requirements in the Order and defining the minimum acceptable elements of the municipal storm water management program. Permit requirements are known at the time of permit issuance and not left to be determined later through Regional Water Board review and approval of Storm Water Management Plans (SWMPs).

32. SWMPs are no longer submitted for Regional Water Board approval. Instead, the Permittees' storm water management programs are reviewed by Regional Water Boards during their review of Annual Reports as part of the administration of the permit.

33. The State Water Board recognizes the necessity of a storm water program guidance document specific to each Permittee to provide planning and guidance for each program area and to identify responsible implementing parties. Permittees must develop and implement a storm water program guidance document and must submit the document in during the application process.

34. Minimum measures have been established in this Order to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance.

35. Each provision establishes the required task description, minimum implementation levels (i.e., escalating enforcement, reporting requirements for tracking projects, number of monitoring sites, etc.), and specific reporting elements to substantiate that the Permittee meets these implementation levels. Regional Water Board staff will be able to evaluate each individual Permittee's compliance through Annual Report review and the program evaluation (audit) process.

36. The provisions contained in this Order were derived from two main U.S. EPA documents: MS4 Program Evaluation Guide[4] and the MS4 Permit Improvement Guide[5] along with interviews and information gathered from a lengthy collaborative stakeholder process.

37. Consistent with 40 Code of Federal Regulations section122.34(a), this Order requires Regulated Small MS4s to reduce pollutant discharges from MS4s to the maximum extent practicable (MEP). The MEP standard requires Permittees apply Best Management Practices (BMPs) that are effective in reducing or eliminating the discharge of pollutants to the waters of the U.S. MEP emphasizes pollutant reduction and source control BMPs to prevent pollutants from entering storm water runoff. MEP may require treatment of the storm water runoff if it contains pollutants. The MEP standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. BMP development is a dynamic process and may require changes over time as the Permittees gain experience and/or the state of the science and art progresses. To do this, the Permittees must conduct and document evaluation and assessment of each relevant element of its program, and their program as a whole, and revise activities, control measures/BMPs, and measurable goals, as necessary to meet MEP. MEP is the cumulative result of implementing, evaluating,

[4] Municipal Separate Storm Sewer System (MS4) Program Evaluation Guidance, USEPA, EPA-833-R-07-003, January 1, 2007
[5] MS4 Permit Improvement Guide, USEPA, April 1, 2010

and creating corresponding changes to a variety of technically appropriate and economically feasible BMPs, ensuring that the most appropriate BMPs are implemented in the most effective manner.

38. The Order's Receiving Water Limitations language is consistent with State Water Board Order WQ 99-05 (*Orange County)* adopted by the State Water Board on June 17, 1999. Receiving Water Limitations apply to all Permittees subject to this Order.

39. Total Maximum Daily Loads (TMDL) are numerical calculations of the maximum amount of a pollutant that a water body can assimilate and still meet water quality standards. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point sources (waste load allocations) and non-point sources (load allocations), background contribution, plus a margin of safety. Discharges from Small MS4s are point source discharges subject to TMDLs. This Order requires Permittees to comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations section 130.7 for which the Permittee has been assigned a Waste Load Allocation or has been identified in Attachment G. The high variance in the level of detail and specificity of TMDLs necessitates the development of more specific permit requirements in many cases to provide clarity to the Permittees regarding responsibilities for compliance. The Regional Water Boards have submitted TMDL-specific permit requirements to the State Water Board, for applicable TMDLs, along with statements explaining how the requirements are designed to achieve the goals of the TMDLs (incorporated into the Fact Sheet). The TMDL-specific permit requirements are summarized in Attachment G and are an enforceable component of this Order. The Regional Water Boards are additionally being directed through this Order to review the TMDL-specific permit requirements of Attachment G in consultation with the Permittees and propose any revisions to the State Water Board within six months of the effective date of this Order. Any such revisions will be incorporated into the permit through a reopener.

40. Degraded watershed processes lead to degraded water quality. Post-construction standards and criteria for individual projects cannot fully protect beneficial uses without assessing dominant watershed processes.

41. The post-construction requirements and design standards contained in this Order are consistent with State Water Board Order WQ 2000-11 (*Bellflower)*.

42. Permittees will submit Annual Reports electronically using the State Water Board's Storm Water Multi-Application Reporting and Tracking System (SMARTS). The purpose of the Annual Report is to evaluate (1) the implementation of Permittees' storm water program; (2) the effectiveness of BMPs and Measurable Goals, (3) the Permittee's improvement opportunities to achieve MEP, and (4) any supplemental information required by a Regional Water Board in accordance with the Regional Water Board's specific requirements.

43. To apply for General Permit coverage authorizing storm water discharges to surface waters pursuant to this Order, the Permittees shall electronically file a Notice of Intent (NOI) using SMARTS and mail the appropriate permit fee to the State Water Board. The NOI represents the Permittee's commitment to comply with the BMPs specified in this Order to achieve compliance with the minimum control measures specified at 40 Code of Federal Regulations sections122.34 (b)(1) through (b)(6).

44. Under 40 Code of Federal Regulations section 122.35, a Separate Implementing Entity (SIE) can implement a storm water management program for another entity such as a municipality, agency, or special district. The SIE implements parts or all of a storm water program for a Permittee. Permittees relying on a SIE to implement their entire program must electronically file an NOI using SMARTS and mail appropriate fee to the State Water Board.

45. Each Permittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water and operation and maintenance (O&M). Enforcement actions concerning this Order will be pursued only against the individual Permittee responsible for specific violations of this Order.

46. In accordance with 40 Code of Federal Regulations section122.28(b)(3), a Regional Water Board may issue an individual MS4 NPDES Permit to a Permittee otherwise subject to this Order, or adopt an alternative general permit that covers storm water discharges regulated by this Order. In accordance with Code of Federal Regulations section 122.34(b)(3), a Regulated Small MS4 in the same urbanized area as a medium or large MS4 may jointly with the medium or large MS4 seek a modification of the other MS4s permit to be added as a limited co-permittee. The applicability of this Order is automatically terminated on the effective date of the individual permit or joint permit or the date of approval for coverage under the alternative general permit.

47. Certain BMPs implemented or required by Permittees for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperation among the Permittees, local vector control agencies, Regional Water Board staff, and the California State Department of Public Health is necessary to identify and implement appropriate vector control measures that minimize potential nuisances and public health impacts resulting from vector breeding.

48. 40 Code of Federal Regulations section 131.12 requires that state water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Board established California's anti-degradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal anti-degradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Water Quality Control Plans (Basin Plans) implement, and incorporate by reference, both the State and federal anti-degradation policies.

49. This action to adopt an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21100, et seq.) in accordance with Water Code section13389. (*County of Los Angeles v. Cal. Water Boards*, (2006), 143 Cal.App.4th 985.)

50. Following public notice in accordance with State and federal laws and regulations, the State Water Board, in a public hearing on (insert public hearing date) heard

and considered all comments. The State Water Board has prepared written responses to all significant comments.

51. The State Water Board has considered the costs of complying with this Order and whether the required BMPs meet the minimum MEP Standard required by federal law. Further discussion of cost of compliance is included in the Fact Sheet.

52. This Order shall serve and become effective as an NPDES permit and the Permitees shall comply with all its requirements pursuant to the timeframes identified within the permit.

IT IS HEREBY ORDERED that operators of Small MS4s subject to this Order shall comply with the following:

A. APPLICATION REQUIREMENTS FOR ALL SMALL MS4 PERMITTEES

Any Small MS4s designated under this Order that chooses instead to apply for an individual permit or request to join the permit of a Phase I Permittee must notify the Regional Water Board of its intent to do so within six months of the General Permit effective date.

A.1. Small MS4 Permittees (Except for Department of Defense and Department of Corrections and Rehabilitation Permittees)

a. Permittee shall electronically file an NOI via SMARTS and mail the appropriate fee to the State Water Board within six months of the General Permit effective date. If the Permittee was designated as a Regulated Small MS4 by a Regional Water Board after adoption of this Order, the Permittee shall file the NOI and mail the appropriate fee within six months of the date of designation.

b. General Permit coverage will be in effect upon receipt of the following:
   1) NOI via SMARTS
   2) Appropriate Fee (in accordance with the most recent fee schedule[6])
   3) Permit boundary map delineating permit jurisdiction: At a minimum the map shall include the following:

      (a) Phase II MS4 permit boundary based on 2010 Census data. For cities, the permit area boundary is the city boundary. For Counties, permit boundaries must include urbanized areas and places identified in Attachment A located within their jurisdictions. The boundaries must be proposed in the permit boundary map and may be developed in conjunction with the applicable Regional Water Board
      (b) City/County Boundaries
      (c) Main Arterial Streets
      (d) Highways
      (e) Waterways
      (f) Phase I MS4 Permit Boundary (if applicable)

[6] California Code of Regulations. Title 23. Division 3. Chapter 9 Waste Discharge Reports and Requirements. Article 1 Fees.

4) Guidance document: The document shall at least include the following:
(a) Overall planning
(b) Identify all permit requirements and responsible implementing parties

A.2. Department of Defense and Department of Corrections and Rehabilitation Permittees

a. Permittee shall electronically file an NOI via SMARTS and mail the appropriate fee to the State Water Board within six months of the General Permit effective date. If the Permittee was designated as a Regulated Small MS4 by a Regional Water Board after adoption of this Order, the Permittee shall file the NOI and mail the appropriate fee within six months of the date of designation.

b. General Permit coverage will be in effect upon receipt of the following:
1) NOI via SMARTS
2) Appropriate Fee (in accordance with the most recent fee schedule[7])
3) Permit boundary map delineating only the outlying jurisdictional boundary.

A.3. Waiver Certification

Regulated Small MS4s may seek a waiver from the General Permit requirements if they meet criteria specified in 40 CFR §122.32(c)-(e) or additional criteria specified in A.3.b.(3) below.

In order for a Regional Water Board to waive requirements for a Regulated Small MS4, (1) the Regulated Small MS4 must certify that its discharges do not cause or contribute to, or have the potential to cause or contribute to, a water quality impairment, and (2) the Regulated Small MS4 must meet one of the waiver options in section b below:

a. Waiver Certification Application Requirements - A Waiver Certification will only be in effect upon completion of the following:
1. Annual Waiver Certification submitted via SMARTS.
2. Annual Waiver Certification renewal fee of $200 plus any applicable surcharge.
3. Letter via SMARTS from Regional Water Board or its Executive Officer waiving requirements.

Requirements are automatically waived if the Regional Water Board does not respond within six months.

b. Waiver Criteria
(1) Option 1

(a) The jurisdiction served by the system is less than 1,000 people;
(b) The system is not contributing substantially to the pollutant loadings of a physically interconnected regulated MS4; and

[7] California Code of Regulations. Title 23. Division 3. Chapter 9 Waste Discharge Reports and Requirements. Article 1 Fees.

(c) If the small MS4 discharges any pollutants identified as a cause of impairment of any water body to which it discharges, storm water controls are not needed based on waste load allocations that are part of an EPA approved or established TMDL that addresses the pollutant(s) of concern.

(2) Option 2

(a) The jurisdiction served by the system is less than 10,000 people;
(b) The Regional Water Board has evaluated all waters of the U.S. that receive a discharge from the system;
(c) The Regional Water Board has determined that storm water BMPs are not needed based on wasteload allocations that are part of an EPA approved or established TMDL that addresses the pollutant(s) of concern or an equivalent analysis; and
(d) The Regional Water Board has determined that future discharges from the Regulated Small MS4 do not have the potential to result in exceedances of water quality standards.

(3) Option 3 (applicable to Small MS4s outside an Urbanized Area only)

Small Disadvantaged Community – The Regulated Small MS4 certifies that it is a community with a population of 20,000 or less with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. (Wat. Code, § 79505.5 , subd.(a)).

If the Waiver Certification Application Requirements or conditions of any waiver option are not met by the Regulated Small MS4, then the Regulated Small MS4 must submit a NOI via SMARTS and appropriate fee for coverage under this General Permit or apply for an individual NPDES permit.

The State Water Board or a Regional Water Board can, at any time, require a previously waived Regulated Small MS4 to comply with this General Permit or an individual NPDES permit if circumstances change so that the conditions of the waiver are no longer met. Changed circumstances can also allow a Regulated Small MS4 to request a waiver at any time.

B. DISCHARGE PROHIBITIONS

1. Discharges of waste that are prohibited by Statewide Water Quality Control Plans or applicable Regional Water Quality Control Plans (Basin Plans) are prohibited.

2. Discharges of storm water to waters of the U.S. in a manner causing or threatening to cause a condition of pollution or nuisance as defined in Water Code § 13050 are prohibited.

3. Discharges of material other than storm water to waters of the U.S. or another permitted MS4 shall be effectively prohibited, except as allowed under this Provision or as otherwise authorized by a separate NPDES permit. The following

non-storm water discharges are not prohibited provided any pollutant discharges are identified and appropriate control measures to minimize the impacts of such discharges, are developed and implemented under the Permittee's storm water program. This provision does not obviate the need to obtain any other appropriate permits for such discharges.

a. water line flushing;
b. individual residential car washing;
b. diverted stream flows;
c. rising ground waters;
d. uncontaminated ground water infiltration (as defined at 40 CFR §35.2005(20)) to separate storm sewers;
e. uncontaminated pumped ground water;
f. discharges from potable water sources;
g. foundation drains;
h. air conditioning condensation;
i. springs;
j. water from crawl space pumps;
k. footing drains;
l. flows from riparian habitats and wetlands;
m. dechlorinated swimming pool discharges; and
n. incidental runoff of potable or recycled water from landscaped areas(as defined and in accordance with section B.4 of this Permit).

Discharges or flows from fire-fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the U.S.

If a Regional Water Board Executive Officer determines that any individual or class of non-storm water discharge(s) listed above may be a significant source of pollutants to waters of the U.S. or physically interconnected MS4, or poses a threat to water quality standards (beneficial uses), the Regional Water Board Executive Officer may require the appropriate Permittee to monitor and submit a report and to implement BMPs on the discharge.

4. Discharges of Incidental Runoff shall be controlled. Regulated Small MS4s shall require parties responsible for incidental runoff to implement Sections B.4.a-e below to control the incidental runoff. Incidental runoff is defined as unintended amounts (volume) of runoff from potable and recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the area of intended use. Water leaving an intended use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence.

   Parties responsible for controlling incidental runoff shall

   a. Detect leaks (for example, from broken sprinkler heads) and correct the leaks within 72 hours of learning of the leak,

b. Properly design and aim sprinkler heads,

c. Not irrigate during precipitation events,

d. Manage pond containing recycled water such that no discharge occurs unless the discharge is a result of a 25-year, 24-hour storm event or greater, and the appropriate Regional Water Board is notified by email no less than four hours prior to the discharge. The notification is to include identifying information, including the Permittee's name and permit identification number and

e. Any other actions necessary to prevent the discharge of incidental runoff to the MS4 or waters of the U.S.

Non-storm water discharge runoff that is not incidental is prohibited, unless otherwise specified in Section B.3 above.

Incidental runoff may be regulated by waste discharge requirements or, where necessary, waste discharge requirements that serve as a NPDES permit, including MS4 permits.

5. Discharge to Areas of Special Biological Significance (ASBS) is prohibited except in compliance with the ASBS Special Protection Provisions in Attachment C. Regulated Small MS4s that discharge to an ASBS are listed in Attachment D and are subject to the ASBS Special Protection Provisions

C. EFFLUENT LIMITATIONS

1. Permittees shall reduce the discharge of pollutants from their MS4s to waters of the United States to the MEP and as necessary to achieve TMDL waste load allocations (WLAs) established for discharges by the MS4s and to comply with the Special Protections for discharges to ASBS.

2. Storm water discharges regulated by this Order shall not contain a hazardous substance in amounts equal to or in excess of a reportable quantity listed in 40 CFR Part 117 or 40 CFR Part 302.

D. RECEIVING WATER LIMITATIONS

Discharges shall not cause or contribute to an exceedance of water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule (CTR), or in the applicable Regional Water Board Basin Plan.

The Permittee shall comply with Receiving Water Limitations through timely implementation of control measures/BMPs and other actions to reduce pollutants in the discharges and other requirements of this Order including any modifications. The storm water program shall be designed to achieve compliance with Receiving Water Limitations. If exceedance(s) of water quality objectives or water quality standards persist notwithstanding implementation of other storm water program requirements of

this Order, the Permittee shall assure compliance with Receiving Water Limitations by complying with the following procedure:

1. Upon a determination by either the Permittee or the Regional Water Board that MS4 discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Water Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The Regional Board may require modifications to the report;

2. Submit any modifications to the report required by the Regional Water Board within 30 days of notification;

3. Implement the actions specified in the report in accordance with the approved schedule.

4. So long as the Permittee has complied with the procedure set forth above and is implementing the actions, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the State Water Board or the Regional Water Board to develop additional BMPs.

E. PROVISIONS FOR ALL TRADITIONAL SMALL MS4 PERMITTEES

E.1. RENEWAL TRADITIONAL SMALL MS4 PERMITTEES

E.1.a. All Renewal Traditional Small MS4s Permittees shall comply with this Section. Where the requirements of a certain subsection provide a compliance date that is past the effective date of this Order, the Renewal Traditional Small MS4 shall implement its existing program until that date.

E.1.b. If a Regional Water Board Executive Officer determines a Renewal Traditional Small MS4 Permittee's current implementation of BMPs is equally or more effective at reducing pollutant discharges than implementation of the requirements of a given subsection, the Executive Officer may require continued implementation of the Permittee's current BMPs and reporting requirements in lieu of implementation of the requirements of that subsection

The Permittee may submit a request in writing to the State Water Board Executive Director for review of the Executive Officer's determination.

Exceptions: All Permittees must implement post-construction and monitoring programs as specified in this Order.

E.2. NEW TRADITIONAL SMALL MS4 PERMITTEES

New Traditional Small MS4s shall comply with this Section.

E.3. NON-TRADITIONAL SMALL MS4S PERMITTEES

Non-Traditional Small MS4s Permittees shall comply with Section F of this Order.

E.4. SMALL MS4 ASBS PERMITTEES

Both Traditional and Non-traditional Small MS4s Permittees that discharge to ASBS as listed on Attachment D shall comply with Attachment C in addition to all other applicable provisions of this Order.

E.5. SEPARATE IMPLEMENTING ENTITY (SIE)

Permittees, both Traditional and Non-traditional Small MS4s, may rely on a SIE to satisfy one or more of the permit obligations, if the SIE can appropriately and adequately address the storm water issues of the Permittee. The SIE must agree to implement the BMPs, or components thereof, to achieve compliance with the Order. If the SIE fails to implement the BMPs, the Permittee remains responsible for compliance with this Order.

E.6. PROGRAM MANAGEMENT ELEMENT

To effectively implement a coordinated storm water program, the Permittee shall have an overarching Program Management element in its storm water management program. The Program Management element shall include the following:

E.6.a. Legal Authority

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall review and revise relevant ordinances or other regulatory mechanisms, or adopt any new ordinances or other regulatory mechanisms, to obtain adequate legal authority to control pollutant discharges into and from its MS4, and to meet the requirements of this Order.

(ii) **Implementation Level** –At a minimum, the Permittee shall have adequate legal authority to:

(a) Prohibit and eliminate non-storm water discharges to the MS4. Exceptions to this prohibition may include the non-storm water discharges in B.3, only if they are considered non-significant contributors of pollutants.

(b) Prohibit and eliminate illicit discharges and illegal connections to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4. Illicit discharges include all non-storm water discharges not otherwise

authorized in this Order, including discharges from organized car washes, mobile cleaning and pressure wash operations,

(c) Respond to the discharge of spills, and prohibit dumping or disposal of materials other than storm water into the MS4.

(d) Require parties responsible for incidental runoff to implement Discharge Prohibition, B.4.a-e to control incidental runoff.

(f) Require operators of construction sites, new or redeveloped land; and industrial and commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of BMPs consistent with the California Storm Water Quality Association (CASQA) Best Management Practice Handbooks or equivalent.

(g) Require information pursuant to local development policy or public health regulations, and other information deemed necessary to assess compliance with this Order. The Permittee shall also have the authority to review designs and proposals for new development and redevelopment to determine whether adequate BMPs will be installed, implemented, and maintained during construction and after final stabilization (post-construction).

(h) Enter private property for the purpose of inspecting, at reasonable times, any facilities, equipment, practices, or operations for active or potential storm water discharges, or non-compliance with local ordinances/standards or requirements in this Order.

(i) Require that dischargers promptly cease and desist discharging and/or cleanup and abate a discharge, including the ability to:

(1) Effectively require the discharger to abate and clean up their discharge, spill, or pollutant release within 72 hours of notification; high risk spill should be cleaned up as soon as possible.

(2) Require abatement within 30 days of notification, for uncontrolled sources of pollutants that could pose an environmental threat;

(3) Perform the clean-up and abatement work and bill the responsible party, if necessary;

(4) Provide the option to order the cessation of activities until such problems are adequately addressed if a situation persists where pollutant-causing sources or activities are not abated;

(5) Require a new timeframe and notify the appropriate Regional Water Board when all parties agree that clean-up activities cannot be completed within the original timeframe and notify the appropriate Regional Water Board in writing within five business days of the determination that the timeframe requires revision.

(j) When warranted, have the ability to:

(1) Levy citations or administrative fines against responsible parties either immediately at the site, or within a few days.

(2) Require recovery and remediation costs from responsible parties.

(k) Impose more substantial civil or criminal sanctions (including referral to a city or district attorney) and escalate corrective response, consistent with its

Enforcement Response Plan developed pursuant to Section E.4.c., for persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm.

E.6.b. Certification

(i) **Task Description –** The Permittee shall certify by its Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative as described in 40 Code of Federal Regulations section 122.22(b) that the Permittee has and will maintain full legal authority to implement and enforce each of the requirements contained in this Order.

(ii) **Implementation Level** – The Permittee's certification statement shall include the following:

(a) Identification of all departments within the Permittee's jurisdiction that conduct storm water-related activities and their roles and responsibilities under this Order; and an up-to-date organizational chart specifying these departments, key personnel, and contact information.

(b) Citation of storm water runoff related ordinances, identification of the topics each ordinance addresses;

(c) Identification of the local administrative and legal procedures and ordinances available to mandate compliance with storm water-related ordinances and therefore with the conditions of this Order.

(d) A description of how storm water related-ordinances are reviewed and implemented.

(e) A description of whether the municipality can issue administrative orders and injunctions, or whether it must work through the court system for enforcement actions.

(iii) **Reporting** – All Permittees shall submit in the first year online Annual Report, a statement signed by both the Permittee's legal counsel and an authorized signatory certifying the Permittee has adequate legal authority in accordance with 40 Code of Federal Regulations section 122.26(d)(2)(i)(A-F) to comply with all Order requirements.

E.6.c. Enforcement Measures and Tracking

(i) **Task Description** - The Permittee shall develop and implement an Enforcement Response Plan. The Enforcement Response Plan shall contain enforcement procedures and actions and identify the Permittee's responses to violations and describe how the Permittee will address repeat and continuing violations by implementing progressively stricter responses as needed to achieve compliance.

(ii) **Implementation Level -** The Enforcement Response Plan shall describe how the Permittee will use each of the following types of enforcement responses based on the type of violation:

(a) Verbal Warnings – Verbal warnings are primarily consultative in nature. At a minimum, verbal warnings shall specify the nature of the violation and required corrective action.

(b) Written Notices – Written notices shall include nature of the violation and the required corrective action, with deadlines for taking such action.

(c) Escalated Enforcement Measures – The Permittee shall establish legal authority to employ any combination of the enforcement actions below (or their functional equivalent), and to escalate enforcement responses where necessary to correct persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm:

(1) Citations (with Fines) – The Enforcement Response Plan shall describe when the Permittee will assess monetary fines, which may include civil and administrative penalties.

(2) Stop Work Orders – The Enforcement Response Plan shall describe when the Permittee will issue stop work orders that require construction activities to be halted, except for those activities directed at cleaning up, abating discharge, and installing appropriate BMPs.

(3) Withholding of Plan Approvals or Other Authorizations – Where a facility is in non-compliance, the Enforcement Response Plan shall describe how the Permittee's own approval or authorization processes that affect the facility's ability to discharge to the MS4 can be used to abate the violation.

(4) Additional Measures – The Enforcement Response Plan may also describe other escalated measures the Permittee has under its local legal authorities. For example, the Permittee may need to improve erosion control measures and collect the funds to pay for work and materials from the responsible party by either collecting against the project's bond or directly billing the responsible party.

(d) NPDES Permit Referrals–For those construction projects or industrial facilities subject to the State's CGP or IGP, the Permittee shall:

(1) Refer non-filers (i.e., those facilities that cannot demonstrate that they obtained permit coverage) to the appropriate Regional Water Board within 30 days of making that determination, or file a complaint on the State Water Board's website. In making such referrals, at a minimum include the following documentation:

(a) Construction project or industrial facility location.

(b) Name of owner or operator.

(c) Estimated construction project size or type of industrial activity (including the Standard Industrial or the North American Industry Classification, if known).

(d) Records of communication with the owner or operator regarding filing requirements.

(2) Refer ongoing violations to the appropriate Regional Water Board provided that the Permittee has made a good faith effort of progressive enforcement to achieve compliance with its own

ordinances. At a minimum, the Permittee's good faith effort shall include documentation of two follow-up inspections and two warning letters or notices of violation. In making such referrals, the Permittee shall include, at a minimum, the following information:

(a) Construction project or industrial facility location

(b) Name of owner or operator

(c) Estimated construction project size or type of industrial activity (including Standard Industrial Classification or North American Industry Classification System if known)

(d) Records of communication with the owner or operator regarding the violation, including at least two follow-up inspections, two warning letters or notices of violation, and any response from the owner or operator

(e) Enforcement Tracking –Track instances of non-compliance via hard-copy files or electronically. The enforcement tracking documentation shall include, at a minimum, the following:

(1) Name of owner/operator

(2) Location of construction project or industrial facility

(3) Description of violation

(4) Required schedule for returning to compliance

(5) Description of enforcement response used, including escalated responses if repeat violations occur or violations are not resolved within the time specified in the enforcement action.

(6) Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violations, etc.)

(7) Any referrals to different departments or agencies

(8) Date violation was resolved

(f) Recidivism Reduction – The Permittee shall identify chronic violators of any provision of this Order or of any related local ordinance or regulation and reduce the rate of noncompliance recidivism. The Permittee shall develop incentives, disincentives, or increase inspection frequency at the operator's sites to prevent chronic violations.

(iii) **Reporting** – By the third year Annual Report and annually thereafter, complete and have available an Enforcement Response Plan Report summarizing all enforcement activities including inspections of chronic violators and the incentives, disincentives, or escalated enforcement responses at each site. Summarizations of enforcement activities shall include, at a minimum, the following information for each type of site or facility:

(a) Number of violations, including a listing of sites or facilities with identified violations

(b) Number of enforcement actions, including types

(c) Other follow-up actions taken

(d) Demonstration that compliance has been achieved for all violations, or a description of actions that are being taken to achieve compliance

E.7. EDUCATION AND OUTREACH PROGRAM

Traditional Small MS4 Permittees may be required to implement Community-Based Social Marketing requirements as detailed in Attachment E upon determination by a Regional Board Executive Officer.

E.7.a. Public Education and Outreach

All Permittees shall comply with the requirements in this Section by selecting one or more of the following Public Education and Outreach options:

(i) Contributing to a countywide storm water program, as determined appropriate by the Permittee members, so that the countywide storm water program conducts outreach and education on behalf of its members; or
(ii) Contributing to a regional outreach and education collaborative effort (a regional outreach and education collaborative effort occurs when all or a majority of the Permittees collaborate to conduct regional outreach and education. Regional outreach and education collaboration includes Permittees defining a uniform and consistent message, deciding how best to communicate the message, and how to facilitate behavioral changes, then collaboratively apply what is learned through local jurisdiction groups, pooling resources and skills.); or
(iii) Fulfilling outreach and education requirements within their jurisdictional boundaries on their own; or
(iv) A combination of the previous options, so that all requirements are fulfilled.

Reporting – By the first year Annual Report, the Permittee shall identify which Public Education and Outreach option(s) it will use to comply with this Section. For each option involving a contribution to a countywide storm water program or regional outreach and education collaborative effort, the Permittee shall complete and have available in the first year Annual Report documentation, such as a written agreement, letter or similar document, which confirms the collaboration with other MS4s.

(i)**Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop and implement a comprehensive storm water public education and outreach program. The public education and outreach program shall be designed to reduce pollutant discharges in storm water runoff and non-storm water discharges to the MS4 through increased storm water knowledge and awareness in target communities. The Public Education and Outreach Program shall (1) measurably increase the knowledge of targeted communities regarding the municipal storm drain system, impacts of urban runoff and non-storm water discharges on receiving waters, and potential BMP solutions for the target audiences and (2) measurably increases the awareness of target

audiences, thereby reducing pollutant releases to the MS4 and the environment.

(ii) **Implementation Level** –The Permittee shall, at a minimum:

(a) Develop and implement a public education strategy that establishes education tasks based on water quality problems, target audiences, and anticipated task effectiveness. The strategy must include identification of who is responsible for implementing specific tasks, a schedule for task implementation. The strategy must demonstrate how specific high priority storm water quality issues in the community or local pollutants of concern are addressed.

(b) Implement surveys at least twice during the permit term to gauge level of awareness in target audiences and effectiveness of education tasks.

(c) Develop and convey a specific storm water message that focuses on the following:
  (1) Local pollutants of concern
  (2) Target audience
  (3) Regional water quality issues

(d) Develop and disseminate appropriate educational materials in multiple languages when appropriate (e.g. the materials can utilize various media such as printed materials, billboard and mass transit advertisements, signage at select locations, stenciling at storm drain inlets, radio advertisements, television advertisements, and websites);
(e) Utilize public input (e.g., the opportunity for public comment, or public meetings) in the development of the program;
(f) Distribute the educational materials, using whichever methods and procedures determined appropriate during development of the public education strategy;
(g) Convey messages to explain the benefits of water-efficient and storm water-friendly landscaping[8] using existing information;
(h) Develop and convey messages specific to reducing illicit discharges with information about how the public can report incidents to the appropriate authorities. The Permittee must promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers for complaints and spill reporting, and publicize to both internal Permittee staff and the public. If 911 is selected, the Permittee must also create, maintain, and publicize a staffed, nonemergency phone number with voicemail, which is checked daily;
(i) Develop and convey messages specific to proper application of pesticides, herbicides, and fertilizers;
(j) Provide storm water education to school-age children. The Permittee may use California's Education and Environment Initiative Curriculum[9] or equivalent.

[8] For example, Surfrider's Ocean Friendly Garden Program (http://www.surfrider.org/programs/entry/ocean-friendly-gardens)

(k) Reduce discharges from organized car washes, mobile cleaning and pressure washing operations, and landscape irrigation.
(l) Conduct storm water-friendly education for organized car wash participants and provide information pertaining to car wash discharge reduction. The Permittee may use the Sacramento Stormwater Quality Partnership's River Friendly Carwash Program[10], or equivalent, for guidance.
(m) Develop and convey messages specific to mobile cleaning and pressure wash businesses.

(iii) **Reporting** – By the third year Annual Report and annually thereafter, complete and have available a report on the public education strategy and general program development and progress. By the fifth year Annual Report, complete and submit a report summarizing changes in public awareness and knowledge resulting from the implementation of the program and any modifications to the public outreach and education program. Report on the public education development of education materials, methods for educational material distribution, public input, landscaping outreach, reporting of illicit discharges, proper application of pesticides, herbicides, and fertilizers, elementary school education, reduction of discharges from organized car washes, mobile cleaning and pressure washing operations, and landscape irrigation efforts. Annually report the number of trainings and the study and results to date. For the entire permit term, submit Annual Report summarizing changes in public awareness and knowledge of storm water issues.

E.7.b. Staff and Site Operator Training and Education

E.7.b.1. Illicit Discharge Detection and Elimination Training

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement a training program for all Permittee staff who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illicit connection to the storm drain system.

(ii) **Implementation Level** – The training program shall include at a minimum:
(a) Identification of an illicit discharge or connection.
(b) Proper procedures for reporting and responding to the illicit discharge or connection.
(c) Follow-up training shall be provided as needed to address changes in procedures, techniques, or staffing.
(d) An annual assessment of their trained staff's knowledge of illicit discharge response and refresher training as needed.
(e) Training for new staff who, as part of their normal job responsibilities may be notified of, come into contact with, or otherwise observe an illicit discharge or illicit connection shall be trained no later than six months after the start of employment.

[9] http://www.californiaeei.org/
[10] http://www.beriverfriendly.net/riverfriendlycarwashing/

(f) Contact information, including the procedure for reporting an illicit discharge, shall be included in each of the Permittee's fleet vehicles that are used by field staff.

(g) Focused education in identified illicit discharge flow areas based on identified illicit discharge(s).

(iii) **Reporting** - The Permittee shall document and maintain records of the training provided and the staff trained annually in the Annual Report.

E.7.b.2. Construction Outreach and Education

a) **Permittee Staff Training**

(i) **Task Description** – The Permittee shall ensure that all staff implementing the construction site storm water runoff control program are adequately trained.

(ii) **Implementation Level** – The Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(a) Plan Reviewers and Permitting Staff - The Permittee shall ensure plan reviewers and permitting staff are qualified individuals, knowledgeable in the technical review of local erosion and sediment control plans, (including proper control measure selection, installation, implementation, and maintenance, as well as administrative requirements such as inspection reporting/tracking and the use of the Permittee's enforcement responses), and are certified pursuant to a sponsored program as a Qualified SWPPP Developer (QSD).

(b) Erosion Sediment Control/Storm Water Inspectors - The Permittee shall ensure inspectors are qualified individuals, knowledgeable in inspection procedures, and are certified pursuant to a State Water Board sponsored program as either a *Qualified SWPPP Developer (QSD) or* a Qualified SWPPP Practitioner (QSP) or designated person on staff with each credential.

(c) Third-Party Plan Reviewers, Permitting Staff, and Inspectors - If the Permittee utilizes outside parties to review plans and/or conduct inspections, the Permittee shall ensure these staff are trained.

(iii) **Reporting** – By the second year of the permit term and annually thereafter, submit the following information:

(a) Training topics covered.

(b) Dates of training.

(c) Number and percentage of Permittees' staff, as identified in Sections a-c above, attending each training.

(d) Results of any surveys conducted to demonstrate the awareness and potential behavioral changes in the attendees.

b) **Construction Site Operator Education**

(i) **Task Description** – The Permittee shall develop and distribute educational materials to construction site operators.

(ii) **Implementation Level** – The Permittee shall do the following:
(a) Each year, provide information on training opportunities for construction operators on BMP selection, installation, implementation, and maintenance as well as overall program compliance.
(b) Develop or utilize existing outreach tools (i.e. brochures, posters, etc.) aimed at educating construction operators on appropriate selection, installation, implementation, and maintenance of storm water BMPs, as well as overall program compliance.
(c) Distribute appropriate outreach materials to all construction operators who will be disturbing land within the MS4 boundary. The Permittee's contact information and website shall be included in these materials.
(d) Update the existing website to include information on appropriate selection, installation, implementation, and maintenance of BMPs.

(iii) **Reporting –** By the third year Annual Report and annually thereafter, complete and submit a report including the following information:
(a) Training topics covered;
(b) Dates of training;
(c) Number and percentage of Permittee's operators, inspectors, and number of contractors attending each training;
(d) Results of any surveys conducted to demonstrate the awareness and potential behavioral changes in the attendees.

E.7.b.3. Pollution Prevention and Good Housekeeping Staff Training

The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations.

(i) **Task Description** – The Permittee shall develop a biennial employee training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices in the Pollution Prevention/Good Housekeeping for Permittee Operations sections of this Order. The Permittee shall determine the need for interim training during alternate years when training is not conducted, through an evaluation of employee Pollution Prevention/Good Housekeeping

knowledge. All new hires must receive this training within the first year of their hire date.

(ii) **Implementation Level** – The training program shall include the following:

(a) Annual training for all employees implementing this program element. This annual training shall include a general storm water education component, any new technologies, operations, or responsibilities that arise during the year, and the permit requirements that apply to the staff being trained. Employees shall receive clear guidance on appropriate storm water BMPs to use at municipal facilities and during typical O&M activities.

(b) An annual assessment of trained staff's knowledge of pollution prevention and good housekeeping and shall revise the training as needed.

(c) A requirement that any contractors hired by the Permittee to perform O&M activities shall be contractually required to comply with all of the storm water BMPs, good housekeeping practices, and standard operating procedures described above.

The Permittee shall provide oversight of contractor activities to ensure that contractors are using appropriate BMPs, good housekeeping practices and following standard operating procedures.

(iii) **Reporting** – By the second year Annual Report and annually thereafter, complete and submit a summary that includes oversight procedures and identifies and tracks all personnel requiring training and assessment and records.

E.8. PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall involve the public in the planning and implementation of activities related to the development and implementation of the program. The public participation and involvement program shall encourage volunteerism, public comment and input on policy, and activism in the community. The Permittee shall also be involved in their Integrated Regional Water Management Plan (IRWMP) or other watershed-level planning effort.

(ii) **Implementation Level** – At a minimum, the Permittee shall:

(a) Develop a public involvement and participation strategy that establishes who is responsible for specific tasks and goals and a budget for meeting the tasks and goals.

(b) Consider development of a citizen advisory group (either a stand-alone group or utilize an existing group or process). The advisory group may consist of a balanced representation of all affected parties, including residents, business

owners, and environmental organizations in the MS4 service area and/or affected watershed. The Permittee may invite the citizen advisory group to participate in the development and implementation of all parts of the community's storm water program.

(c) Create opportunities for citizens to participate in the implementation of BMPs through sponsoring activities (e.g., stream/beach/lake clean-ups, storm drain stenciling, volunteer monitoring, and educational activities).

(d) Ensure the public can easily find information about the Permittee's storm water program.

(e) Actively engage in the Permittee's IRWMP or other watershed-level planning effort.

(iii) **Reporting** – By the second year Annual Report and annually thereafter, complete and submit a description of the public involvement program and summary of the MS4s efforts related to facilitating public involvement, including efforts to engage citizen advisory groups, increase citizen participation, and involvement with the IRWMP or other watershed-level planning effort.

E.9. ILLICIT DISCHARGE DETECTION AND ELIMINATION

The Permittee shall develop an Illicit Discharge Detection and Elimination program to detect, investigate, and eliminate non-storm water discharges, including illegal dumping, into its system.[11]

E.9.a. Outfall Mapping

(i) **Task Description** - The Permittee shall create and maintain an up-to-date and accurate outfall map. The map may be in hard copy and/or electronic form or within a geographic information system (GIS).

(ii) **Implementation Level** - The outfall map shall at a minimum show:

(a) The location of all outfalls that are operated by the Permittee, drainage areas, and landuse(s) contributing to those outfalls that are operated by the Permittee, and that discharge within the Permittee's jurisdiction to a receiving water

(b) The location (and name, where known to the Permittee) of all water bodies receiving discharges from those outfall pipes. Each mapped outfall shall be located using coordinates obtained from a global positioning system (GPS) and given an individual alphanumeric identifier, which shall be noted on the map. Photographs shall be taken to provide baseline information and track operation and maintenance needs over time.

(c) Priority areas

[11] The Permittee shall use the Center for Watershed Protection's guide on Illicit Discharge Detection and Elimination (IDDE): A Guidance Manual for Program Development and Technical Assistance (available at www.cwp.org) or equivalent when developing an IDDE program.

1) Areas with older infrastructure that is more likely to have illicit connections and a history of sewer overflows or cross-connections
2) Industrial, commercial, or mixed use areas;
3) Areas with a history of past illicit discharges;
4) Areas with a history of illegal dumping;
5) Areas with onsite sewage disposal systems;
6) Areas upstream of sensitive water bodies; and
7) Areas that drain to outfalls greater than 36 inches that directly discharge to the ocean.

(d) Field sampling stations

(e) Location of urbanized area boundaries based on the latest Census data.

(iii) **Reporting** – Complete and have available a map by the second year Annual Report.

E.9.b. Illicit Discharge Source/Facility Inventory

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall maintain an inventory of all industrial/commercial facilities/sources within the Permittee's jurisdiction (regardless of ownership) that could discharge pollutants in storm water to the MS4.

(ii) **Implementation Level** - The inventory shall include the following:

(a) Minimum information for each industrial facility/source:

- Facility name;
- Address;
- Nature of business or activity;
- Physical location (decimal latitude-longitude) of storm drain receiving discharge;
- Name of receiving water and if the facility/source is tributary to a CWA Section 303(d) listed water body segment or water body segment subject to a TMDL;
- Incorporation of facility information into GIS is optional.

(b) At a minimum, the following industrial and commercial facilities/sources shall be included in the inventory.

- Vehicle salvage yards
- Metal and other recycled materials collection facilities
- Waste transfer facilities
- Vehicle mechanical repair, maintenance or cleaning
- Building trade central facilities or yards
- Corporation yards
- Landscape nurseries and greenhouses
- Building material retailers and storage
- Plastic manufacturers

- Other facilities designated by the Permittees or Regional Water Boards to have reasonable potential to contribute to pollution of storm water runoff

(c) The Permittee shall determine if the facilities that are required to be covered under a NPDES storm water permit have done so. Upon discovering any facilities requiring permit coverage but are not yet permitted, the Permittee shall notify the appropriate Regional Water Board, and include copies of the notification in the online Annual Report.

(d) The Permittee shall update the inventory annually. The update shall be accomplished through collection of new information obtained during inspections and contacts with commercial and industrial facility operators and owners, or through other readily available intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer hook-up permits, and State Water Resources Control Board Storm Water Multiple Application and Report Tracking System (SMARTS) database).

(iii) **Reporting –** By year three online Annual Report, submit inventory and annually thereafter an updated inventory.

E.9.c. Field Sampling to Detect Illicit Discharges

(i) **Task Description** – While conducting the outfall inventory under Section E.9.a, the Permittee shall sample any outfalls that are flowing more than 72 hours after the last rain event. The Permittee shall also sample outfalls annually identified as priority areas.

(ii) **Implementation Level** – The Permittee shall:

(a) Conduct monitoring for the following indicator parameters to help determine the source of the illicit discharge

Table 1. Indicator Parameters

Indicator Parameters Used to Detect Illicit Discharges					
Parameter	**Discharge Types It Can Detect**				
	Sewage	**Washwater**	**Tap Water**	**Industrial or Commercial Liquid Wastes**	**Laboratory/Analytical Challenges**
Ammonia	●	◉	○	◉	Can change into other nitrogen forms as the flow travels to the outfall
Color	◉	◉	○	◉	
Conductivity	◉	◉	○	◉	Ineffective in saline waters
Detergents – Surfactants	●	●	○	◉	Reagent is a hazardous waste

Fluoride*	○	○	●	◉	Reagent is a hazardous waste Exception for communities that do not fluoridate their tap water
Hardness	◉	◉	◉	◉	
pH	○	◉	○	◉	
Potassium	◉	○	○	●	May need to use two separate analytical techniques, depending on the concentration
Turbidity	◉	◉	○	◉	

● Can almost always (>80% of samples) distinguish this discharge from clean flow types (e.g., tap water or natural water). For tap water, can distinguish from natural water.
◉ Can sometimes (>50% of samples) distinguish this discharge from clean flow types depending on regional characteristics, or can be helpful in combination with another parameter
○ Poor indicator. Cannot reliably detect illicit discharges, or cannot detect tap water
N/A: Data are not available to assess the utility of this parameter for this purpose.
Data sources: Pitt (this study)
*Fluoride is a poor indicator when used as a single parameter, but when combined with additional parameters (such as detergents, ammonia and potassium), it can almost always distinguish between sewage and wash water.

(b) Verify that indicator parameters with the following action level concentrations are not exceeded.

Table 2. Action Levels

Action level concentrations for Indicator Parameters	
Indicator Parameter	**Action Level Concentration**
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 µS/cm
Hardness	<= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3
pH	<= 5 or >=9
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

(c) Identify areas of potential follow up actions (e.g. outfall monitoring "up-pipe" of the discharge) if the action level concentrations are exceeded.

(iii) **Reporting** – By second year Annual Report, complete and have available a report summarizing the field investigation results and areas of follow up actions. The report shall summarize all applicable observations.

E.9.d. Illicit Discharge Detection and Elimination Source Investigations and Corrective Actions

(i) **Task Description** - The Permittee shall develop written procedures for conducting investigations into the source of all identified prohibited non-storm water discharges, including approaches to requiring such discharges to be eliminated, and

procedures to implement corrective actions (e.g., BMPs). These procedures shall be included as part of the Illicit Discharge Detection and Elimination program.

(ii) **Implementation Level -** At a minimum, the Permittee shall conduct an investigation(s) to identify and locate the source of any prohibited non-storm water discharge within 72 hours of becoming aware of the prohibited non-storm water discharge.

(a) Non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated within 24 hours.

(b) Investigations of non-storm water discharges suspected of being cooling water, wash water, or natural flows may be delayed until after all suspected sanitary sewage and/or significantly contaminated discharges have been investigated, eliminated and/or resolved.

(c) Report immediately the occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to local Health Department.

(d) Determine and document through its investigations the source of all non-storm water discharges. If the source of the non-storm water discharge is found to be a discharge authorized under the General Permit, no further action is required.

(e) Corrective Action to Eliminate Non-Storm Water Discharge – Once the source of the non-storm water discharge has been determined, the Permittee shall immediately notify the responsible party of the problem, and require the responsible party to conduct all necessary corrective actions to eliminate the non-storm water discharge within 72 hours of notification. Upon being notified that the discharge has been eliminated, conduct a follow-up investigation and field screening to verify that the discharge has been eliminated using BMPs or some other corrective action. The Permittee shall document its follow-up investigation. The Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of field screening and investigations. Resulting enforcement actions shall follow the program's Enforcement Response Plan.

(iii) **Reporting** – Report annually all source investigations and corrective actions. At a minimum the report shall include:

(a) Date(s) the non-storm water discharge was observed;

(b) Results of the investigation;

(c) Any follow-up of the investigation;

(d) Date the investigation was closed.

(e) A summary of all non-storm water discharges that were found.

(f) A summary of all corrective actions

E.9.e. Spill Response Plan

(i) **Task Description** – Permittees shall develop and implement a spill response plan.

(ii) **Implementation Level** - At a minimum, the spill response plan will incorporate the information from E.9.c. and outline the following:

a) Agency roles and responsibilities (e.g. County Department of Environmental Health, local police department, local fire department, etc.)
b) The procedures for responding to complaints
c) How investigations are to be conducted
d) How clean up is initiated or conducted
e) How reporting is completed and what information is required

(iii) **Reporting** – Within the first year of the effective date of the permit, develop or complete and have available a spill response plan that contains the items specified in Section E.9.d. Complete and have available the spill response plan by the first year Annual Report and in subsequent Annual Reports summarize any spill response activities, including any follow-up actions.

E.10. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL PROGRAM

The Permittee shall develop, implement, and enforce a program to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The program shall include the development of an enforceable construction site storm water runoff control ordinance for all projects that disturb less than one acre of soil. Projects that disturb one acre of more of soil or disturb less than one acre but are part of a larger common plan or development or sale are subject to the CGP in addition to the construction site storm water runoff control ordinance.

E.10.a. Construction Site Inventory

(i) **Task Description -** Within the first year of the effective date of the permit, each Permittee shall maintain an inventory of all projects subject to the local construction site storm water runoff control ordinance within its jurisdiction.

(ii) **Implementation Level** –The Permittee shall complete an inventory of all construction projects and continuously update as new projects are permitted and projects are completed. The Permittee shall inventory projects subject to the local construction site storm water runoff control ordinance. For projects subject to the CGP the Permittee may obtain the inventory from the SMARTS database and shall supplement as needed by the Permittee.

The inventory shall contain, at a minimum:
(a) Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor);

(b) The basic site information including location, status, size of the project and area of disturbance;
(c) The location of the project with respect to all waterbodies, waterbodies listed as impaired by sediment-related pollutants, and waterbodies for which a sediment-related TMDL has been adopted and approved by USEPA;
(d) Project threat to water quality;
(e) Current construction phase, as described in this Section;
(f) The required inspection frequency per the local construction site storm water runoff control ordinance. ;
(g) The project start and anticipated completion dates; and
(h) The date the Permittee approved the erosion and sediment control plan in accordance with this Section.

(iii) **Reporting** – The Permittee shall complete and have available an up to date construction site inventory enumerating items listed in this Section with each Annual Report.

E.10.b. Construction Plan Review and Approval Procedures

(i) **Task Description** – Within the first year of the effective date of the permit, the Permittee shall develop procedures to review and approve relevant construction plan documents.

(ii) **Implementation Level** – The review procedures shall meet the following minimum requirements:

(a) Prior to issuing a grading or building permit, the Permittee shall require each operator of a construction activity within its jurisdiction to prepare and submit an erosion and sediment control plan for the Permittee's review and written approval. The Permittee shall not approve any erosion and sediment control plan unless it contains appropriate site-specific construction site BMPs that meet the minimum requirements of the Permittee's construction site storm water runoff control ordinance. If the erosion and sediment control plan is revised, the Permittee shall review and approve those revisions.
(b) Require that the erosion and sediment control plan include the rationale used for selecting or rejecting BMPs, including supporting soil loss calculations, if necessary.
(c) Require that the erosion and sediment control plan list applicable permits including, but not limited to the State Water Board's Construction General Permit, State Water Board 401 Water Quality Certification, U.S. Army Corps 404 permit, and California Department of Fish and Game 1600 Agreement. Include as a condition of the grading permit that the operator submit evidence to the MS4 that all permits required for the project have been obtained prior to commencing soil disturbing activities.
(d) Conduct and document review of each erosion and sediment control plan using a checklist or similar process.

(iii) **Reporting** – By the first year Annual Report, complete and submit a summary of review procedures.

E.10.c. Construction Site Inspection and Enforcement

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall use legal authority to implement procedures for inspecting public and private construction projects and conducting enforcement if necessary. The Permittee may leverage existing inspection procedures and personnel to conduct construction site inspections and enforcement.

(ii) **Implementation Level –** The inspection procedures shall be implemented per the Permittee's local erosion and sediment control ordinance. At a minimum, inspections must be conducted at major project construction milestones. Construction site inspections shall include assessment of compliance with the Permittee's grading, erosion and sediment control, and other applicable ordinances. A Permittee may propose, for Regional Water Board Executive Officer approval, an alternative approach for construction site oversight, provided the Permittee demonstrates the approach will be equally effective at reducing the discharge of pollutants from construction sites to the maximum extent practicable.

(iii) **Reporting –** By the second year Annual Report and annually thereafter, complete and submit a summary of the following information:

(a) Total number of active sites disturbing less than one acre of soil requiring inspection;
(b) Total number of active sites disturbing one acre or more of soil;
(d) Number and percentage of violations;
(e) Number and percentage of each type of enforcement action taken as listed in each Permittee's Enforcement Response Plan;
(f) Number of sites with discharges of sediment or other construction related materials, both actual and those inferred through evidence.;
(g) Number and percentage of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered corrected in a Permittee-defined timely period.
(h) Number and percentage of violations not fully corrected 30 days after the violations are discovered.
(i) Number of follow-up inspections that demonstrated the operator continued to implement BMPs according to plan and the number of follow-up inspections that required further enforcement.

E.11. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM

The Permittee shall develop and implement a program to prevent or reduce the amount of pollutant runoff from Permittee operations. Permittee shall implement appropriate BMPs for preventing or reducing the amount of storm water pollution generated by Permittee operations.

E.11.a. Inventory of Permittee-Owned and Operated Facilities

(i) **Task Description** - Within the second year of the effective date of the permit, the Permittee shall develop and maintain an inventory of Permittee-owned or operated facilities within their jurisdiction that are a threat to water quality, if applicable.

(ii) **Implementation Level** - The inventory shall include the following facilities, if applicable:

- Airports
- Animal control facilities
- Chemical storage facilities
- Composting facilities
- Equipment storage and maintenance facilities (including landscape-related operations)
- Fuel farms
- Hazardous waste disposal facilities
- Hazardous waste handling and transfer facilities
- Incinerators
- Landfills
- Materials storage yards
- Pesticide storage facilities
- Public buildings, including schools, libraries, police stations, fire stations, Permittee (municipal) buildings, restrooms, and similar buildings
- Public parking lots
- Public golf courses
- Public swimming pools
- Public parks
- Public works yards
- Public marinas
- Recycling facilities
- Salt or de-icing storage facilities
- Solid waste handling and transfer facilities
- Transportation hubs (e.g. bus transfer stations)
- Vehicle storage and maintenance yards
- Vehicle fueling facilities
- Other (as directed by appropriate Regional Water Board)

(iii) **Reporting** – By the second year Annual Report complete the inventory and submit and annual updates thereafter.

E.11.b. Map of Permittee-Owned or Operated Facilities

(i) **Task Description –** Within the second year of the effective date of the permit, submit a map of the urban area covered by the MS4 permit and identify where the Permittee-owned or operated facilities are located.

(ii) **Implementation Level** - The map shall identify the storm water drainage system corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The map shall also show the facility and the manager of each facility, including contact information.

(iii) **Reporting** – By the second year Annual Report, complete and have available the completed map and update annually thereafter if any of the provided information has changed.

E.11.c. Facility Assessment

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall conduct a comprehensive inspection and assessment of pollutant discharge potential and pollutant hotspots using the Center for Watershed Protection's (CWP) guide on Urban Subwatershed and Site Reconnaissance, or equivalent.[12]

(ii) **Implementation Levels** - Conduct an annual review and assessment of all municipally owned or operated facilities to determine their potential to impact surface waters. The assessment shall include the following:

(a) Identification of pollutant hotspots

Based on the annual assessment, the Permittee shall identify those facilities that have a high potential to generate storm water and non-storm water pollutants as pollutant hotspots and assign them a high priority. Among the factors to be considered are the type and volume of pollutants stored at the site, the presence of improperly stored materials, activities that should not be performed outside (e.g., changing automotive fluids, vehicle washing), proximity to water bodies, poor housekeeping practices, and the discharge of pollutant(s) of concern to receiving water(s). Pollutant hotspots shall include, at a minimum, the Permittee's maintenance yards, hazardous waste facilities, fuel storage and/or dispensing locations, and airports and marinas any other facilities at which chemicals or other materials have a high potential to be discharged in storm water.

(b) Documentation of the comprehensive assessment procedures and results.

[12] The Permittee shall use the Center for Watershed Protection's guide on Urban Subwatershed and Site Reconnaissance: a User's Manual (available as a free download at www.cwp.org) or equivalent when identifying priority areas. Hotspots are specific operations in a subwatershed that may generate high storm water pollution.

The Permittee shall document the procedures it uses for conducting the comprehensive assessment along with a copy of any site evaluation checklists used to conduct the comprehensive assessment.

(iii) **Reporting** – By the third year Annual Report, complete and have available the results of the Permittee's annual assessment, including the list of identified hotspots and any identified deficiencies and corrective actions taken. The Permittee shall identify designated hotspots on the facility inventory updated and submitted each year.

E.11.d. Storm Water Pollution Prevention Plans

(i) **Task Description** – Within the fourth year of the effective date of the permit, the Permittee shall develop and implement SWPPPs for pollutant hotspots. If a Permittee has an existing document such as Hazardous Materials Business Plan or Spill Prevention Plan, the Permittee is not required to develop a SWPPP if that document includes the necessary information required within a SWPPP.

(ii) **Implementation Level** – The Permittee shall implement the following:

(a) The Permittee shall develop and implement a site-specific SWPPP that identifies a set of storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants to protect water quality. The Permittee may utilize the CWP guide, or equivalent, as guidance.

(b) The SWPPP(s) shall be kept on-site at each of the Permittee-owned or operated facilities' offices for which it was completed. The SWPPP shall be updated as necessary.

(c) At a minimum the SWPPP will address the following:

1) Facility specific information (location, owner, address, etc.)
2) Purpose of the document
3) Key staff/contacts at the facility
4) Site map with drainage identified
5) Identification of significant materials that are handled and stored at the facility that may be exposed to storm water
6) Description of potential pollutant sources
7) Proposed facility BMPs
8) Spill control and cleanup – response to spills
9) Inspection schedule
10) Inspection procedures and checklist for inspections conducted to ensure proper selection, implementation, and maintenance of all BMPs

(iii) **Reporting** – By the fourth year Annual Report, complete and have available a summary of SWPPPs developed for pollutant hotspots. In subsequent Annual Reports, complete and have available a summary of SWPPPs updated.

E.11.e. Inspections, Visual Monitoring and Remedial Action

(i) **Task Description** – Within the fifth year of the effective date of the permit, the Permittee shall conduct regular inspections of Permittee-owned and operated facilities.

(ii) **Implementation Level** – Inspections shall be conducted as follows:

a) Quarterly visual hotspot inspections – Perform quarterly visual inspections, in accordance with the inspection procedures and inspection checklist developed for each Permittee-owned or operated hotspot, to ensure materials and equipment are clean and orderly; to minimize the potential for pollutant discharge; and to ensure effective selection, implementation, and maintenance of BMPs. The Permittee shall look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The quarterly inspections shall be tracked in a log for every facility, and records kept with the SWPPP. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

b) Annual Hotspot comprehensive inspections – At least once per year, the Permittee shall conduct a comprehensive inspection of each hotspot facility, including all storm water BMPs, in accordance with the facility-specific inspection procedures and inspection checklist. The Permittee shall pay specific attention, without limiting its attention, to: waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar potential pollutant-generating areas. The annual inspection results shall be documented and records kept with the SWPPP. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct deficiencies.

c) Quarterly Hotspot visual observation of storm water and non-storm water discharges – At least once per quarter, visually observe discharge location from hotspot facilities. Where discharges are observed identify any observed problems (e.g., color, foam, sheen, turbidity) associated with pollutant sources or BMPs shall be remedied as soon as practicable or before the next storm event, whichever is sooner. Visual observations shall be documented, and records kept with the SWPPP. This inspection shall be done in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

d) Non-Hotspot Inspection – At a minimum, inspect each inventoried municipal facility that is not a hotspot, once per permit term.

(iii) **Reporting** – By the fifth year Annual Report and annually thereafter, complete and submit the following information:
(a) Total number of facilities required to be inspected.
(b) Verification that all inspections were conducted at all facilities in accordance with the requirements of this Section
(c) Summary of spills and corrective actions
(d) Summary of the results of inspections, including a summary of deficiencies noted and corrective actions taken
(e) Results of the quarterly visual observations of storm water discharges
(f) Total number of facilities inspected (visual and comprehensive inspections) and frequency of inspections
(g) All inspection records, reports, and logs
(h) Records of corrective actions taken and the results of corrective actions

E.11.f. Storm Drain System Assessment and Prioritization

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop and implement procedures to assess and prioritize MS4 storm drain system maintenance, including but not limited to catch basins, pipe and pump infrastructure, above-ground conveyances, including receiving water bodies within the Permittee's urbanized area and detention basins.

If flood conveyance maintenance is undertaken by another entity, the Permittee shall coordinate with the flood conveyance management entity by year three to assess and prioritize maintenance of the MS4 storm drain system.

(ii) **Implementation Level** – The Permittee shall:
(a) Assess/prioritize catch basins cleanout– Assign a priority to all catch basins within the Permittee's urbanized areas based on accumulation of high, medium, and low volumes of trash and/or debris.
(b) Assign a high maintenance priority to catch basins that receive citizen complaints/reports.

(iii) **Reporting** – By the second year Annual Report, complete and have available procedures and maintenance prioritization list. If flood conveyance maintenance is undertaken by another entity, complete and have available a summary report of coordination by the first year Annual Report.

E.11.g. Maintenance of Storm Drain System

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall begin maintenance of all high priority storm drain systems on an ongoing schedule.

(ii) **Implementation Level** – The Permittee shall begin maintenance of storm drain systems according to the procedures and priorities developed according to this Section. At a minimum the Permittee shall:

(a) Inspect storm drain systems – Based on the priorities assigned above, develop and implement a strategy to inspect storm drain systems within the Permittee's jurisdiction. At a minimum, inspect all high priority catch basins and systems annually.

(b) Clean storm drains – Develop and implement a schedule to clean high priority catch basins and other systems. Cleaning frequencies shall be based on priority areas, with higher priority areas receiving more frequent maintenance.

(c) Labeling catch basins – Ensure that each catch basin in high foot traffic areas includes a legible storm water awareness message (e.g., a label, stencil, marker, or pre-cast message such as “drains to the creek” or “only rain in the drain”). Catch basins with illegible or missing labels shall be recorded and re-labeled within one month of inspection.

(d) Maintain surface drainage structures – High priority facilities, such as those with recurrent illegal dumping, shall be reviewed and maintained annually as needed. Non-priority facilities shall be reviewed as needed. Removal of trash and debris from high priority areas shall occur annually prior to the rainy season.

(e) Dispose of waste materials – Develop and implement a procedure to dewater and dispose of materials extracted from catch basins. This procedure shall ensure that water removed during the catch basin cleaning process and waste material will not reenter the MS4.

(iii) **Reporting** – By the third year Annual Report, complete and have available a summary of the following information:

(a) Storm sewer maintenance schedule

(b) List of storm sewer systems and the maintenance priority assigned

(c) Documentation of all required storm sewer systems maintenance logs

(d) Documentation of waste material disposal procedure

By the third Annual Report and annually thereafter, the Permittee shall submit verification that all storm drain facilities were maintained according to the priorities, procedures, and schedules developed according to this Section. The report shall include a summary of the results of inspections, deficiencies found, corrective actions taken, and the results of corrective actions.

E.11.h. Permittee Operations and Maintenance Activities (O&M)

(i) **Task Description –** Within the third year of the effective date of the permit, the Permittee shall assess their O&M activities for potential to discharge pollutants in storm water and inspect all O&M BMPs on a quarterly basis.

(ii) **Implementation Level** - The Permittee shall:

(a) Develop and implement a program to assess O&M activities and develop applicable BMPs. The following Permittee O&M activities shall be included in the assessment for their potential to discharge pollutants in storm water:

(1) Road and parking lot maintenance, including sidewalk repair, curb and gutter repair, pothole repair, pavement marking, sealing, and re-paving
(2) Bridge maintenance, including re-chipping, grinding, and saw cutting
(3) Cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas
(4) Right-of-way maintenance, including mowing, herbicide and pesticide application, and planting vegetation
(5) Storm water relevant permittee-sponsored or sanctioned events such as large outdoor festivals, parades, or street fairs (eg. Earth Day, Coastal Cleanup Day, Creek Week)
(6) Green waste deposited in the street
(7) Graffiti removal
(8) Hydrant flushing

(b) Identify all materials that could be discharged from each of these O&M activities, and which materials contain pollutants. Typical pollutants associated with these activities include metals, chlorides, hydrocarbons (e.g. benzene, toluene, ethylbenzene, and xylene), sediment, green waste, herbicide, pesticide, dried paint, and trash.

(c) Develop and implement a set of BMPs that, when applied during Permittee O&M activities, will reduce pollutants in storm water and non-storm water discharges. The Permittee shall use the CASQA Municipal Handbook or equivalent.

(d) Evaluate BMPs – All BMPs implemented during O&M activities shall be evaluated annually.

(iii) **Reporting** – By the third year Annual Report, complete and have available the following:

(a) List of BMPs and associated pollutants with each O&M activity

(b) BMPs applied during Permittee O&M activities

(c) Log of annual BMP evaluations.

(d) Documentation of high priority designated facilities maintained.

By the third Annual Report and annually thereafter, the Permittee shall submit verification that identified BMPs were effectively implemented for all O&M activities.

E.11.i. Incorporation of Water Quality and Habitat Enhancement Features in New Flood Management Facilities

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement a process for incorporating water quality and habitat enhancement features into new and rehabilitated flood management facilities.

(ii) **Implementation Level** – The Permittee shall develop and implement a process to incorporate water quality and habitat enhancement features in the design of all new and rehabilitated flood management projects that are associated with the MS4 or that discharge to the MS4.

(iii) **Reporting –** By the third year Annual Report, complete and have available a summary of the development and implementation process to incorporate water quality and habitat enhancement design into new or upgraded flood management projects. By the fourth year Annual Report and annually thereafter, complete and have available a list of new or upgraded flood management projects, including a summary of water quality and habitat enhancement features incorporated into their design.

E.11.j. Landscape Design and Maintenance

(i) **Task Description** – Within the second year of the effective date of the permit**,** the Permittee shall implement a landscape design and maintenance program to reduce the amount of water, pesticides, herbicides and fertilizers used during Permittee operations and activities.

(ii) **Implementation Tasks** – At a minimum, the Permittee shall:

(a) Evaluate pesticides, herbicides and fertilizers used and application activities performed and identify pollution prevention and source control opportunities.

(b) Implement practices that reduce the discharge of pesticides, herbicides and fertilizers. At a minimum the Permittee shall:

(1) Implement educational activities for municipal applicators and distributors.

(2) Implement landscape management measures that rely on non-chemical solutions, including:

a) Create drought-resistant soils by amending soils with compost
b) Create soil microbial community through the use of compost, compost tea, or inoculation
c) Use native and climate appropriate plants to reduce the amount of water, pesticides, herbicides and fertilizers used

d) Practice grasscycling on decorative turf landscapes to reduce water use and the need for fertilizers
e) Keeping grass clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling
f) Preventing application of pesticides, herbicides and fertilizers during irrigation or within 48 hours of predicted rainfall with greater than 50% probability as predicted by NOAA[13].
g) Limiting or replacing herbicide and pesticide use (e.g., conducting manual weed and insect removal)
h) Prohibiting application of pesticides, herbicides and fertilizers within five feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a water body
i) Reducing mowing of grass to allow for greater pollutant removal, but not jeopardizing public safety

(3) Collect and properly dispose of unused pesticides, herbicides, and fertilizers.

(4) Minimize irrigation run-off by using an evapotranspiration-based irrigation schedule and rain sensors.

(c) Record the types and amounts of pesticides, herbicides and fertilizers used in the permit area.

(iii) **Reporting** - By the second year Annual Report, complete and have available an evaluation of materials used and activities performed for pollution prevention and source control opportunities and a list of practices implemented to minimize the use of herbicide, pesticide, and fertilizers. By the second year Annual Report and annually thereafter, submit verification that identified BMPs were effectively implemented for all landscaping design and maintenance activities. By the second year Annual Report, complete and have available a summary identifying the measures that the Permittee will use to demonstrate reductions in the application of pesticides, herbicides, and fertilizers. In subsequent annual reports, verify implementation of this measure, and describe reductions in pesticide, herbicide, and fertilizer application.

E.12. POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM

E.12.a. Post-Construction Treatment Measures

All Permittees shall implement post-construction treatment measures for new and redevelopment projects and comply with the following Sections:

- E.12.c Site Design Measures
- E.12.d Low Impact Development Runoff Standards
- E.12.f Implementation Strategy for Watershed Process Management
- E.12.g Operation and Maintenance of Post Construction Storm Water Management Measures
- E.12.h Post-Construction Storm Water Management Measure Condition Assessment

[13] www.srh.noaa.gov/forecast

Reporting – By the third year Annual Report, all Permittees shall complete and have available an inventory of projects subject to post-construction treatment measures for new and redevelopment projects.

E.12.b. Hydromodification Measures

All Permittees shall implement post-construction hydromodification measures and comply with the following Sections:

- E.12.e Hydromodification Management [14]
- E.12.f Implementation Strategy for Watershed Process-Based Storm Water Management
- E.12.g Operation and Maintenance of Post Construction Storm Water Management Measures
- E.12.h Post-Construction Storm Water Management Measure Condition Assessment

Reporting -

1. Permittees located within a Phase I MS4 permit boundary with a Regional Water Board approved Hydromodification Plan shall complete and have available a summary report in the year one Annual Report describing the strategies to implement and coordinate with the surrounding Phase I MS4 Permittee Hydromodification Plan. In subsequent Annual Reports, the Permittee shall complete and have available an inventory of projects subject to the surrounding Phase I MS4 Hydromodification Plan requirements.

2. By the third year Annual Report, Permittees located within a Phase I MS4 permit boundary without a Regional Water Board approved Hydromodification Plan or where a plan does not exist shall have available an inventory of the projects subject to Section E.12.e.

3. By the third year Annual Report, Permittees not located within a Phase I MS4 permit boundary area shall have available an inventory of the projects subject to Section E.12.e.

E.12.c. Site Design Measures

(i) **Task Description** – Within the first year of the effective of the permit, the Permittee shall implement site design measures for all projects that create and/or replace (no net increase in impervious footprint) 2,500

[14] Permittees located within a Phase I MS4 permit boundary with a Regional Water Board approved Hydromodification Plan shall implement the Hydromodification Plan requirements for region-wide hydromodification consistency. The Permittee shall develop a summary report describing the strategies to implement and coordinate with the outlying Phase I MS4 Permittee Hydromodification Plan.

square feet or more of impervious surface, including detached single family homes that are not part of a larger plan of development.

(ii) **Implementation Level** - The Permittee shall implement the following site design measures for all projects that create and/or replace 2,500 square feet or more of impervious surface, including detached single family homes that are not part of a larger plan of development. The Permittee may implement one or a combination of the following site design measures to reduce project site runoff to the maximum extent technically feasible:

(a) Stream Setbacks and Buffers
(b) Soil Quality Improvement and Maintenance
(c) Tree planting and preservation
(d) Rooftop and Impervious Area Disconnection
(e) Porous Pavement
(f) Green Roofs
(g) Vegetated Swales
(h) Rain Barrels and Cisterns

E.12.d. Low Impact Development Runoff Standards

E.12.d.1. Regulated Projects

(i) **Task Description** – Within the second year of the effective of the permit, the Permittee shall regulate projects that create and/or replace (no net increase in impervious surface) 5,000 square feet or more of impervious surface for low impact development runoff standards.

(ii) **Implementation Level** - The Permittee shall regulate all projects that create and/or replace 5,000 square feet of impervious surface. Regulated projects as they are defined below do not include the following specific exclusions:

(a) Detached single family home projects that are not part of a larger plan of development;
(b) Interior remodels;
(c) Routine maintenance or repair such as: exterior wall surface replacement, pavement resurfacing within the existing footprint.

Regulated Project Categories include the following:

(a) New Development or redevelopment projects that fall into one of the categories listed below and that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following types on public or private land that fall under the planning and permitting authority of a Permittee. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area

on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

(i) Restaurants (SIC 5812);

(ii) Automotive Repair Shops (SIC 5013,5014, 5541, 7532 – 7534,7536-7539);

(iii) Retail Gasoline Outlets;

(iv) Uncovered parking that is stand-alone or part of any other development project. This category includes the top uncovered portion of parking structures unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure;

(v) Industrial projects;

(vi) Residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments);

(vii) Mixed-use projects, or

(viii) Public projects.

(b) Where a redevelopment project in the categories specified above results in an increase of more than 50 percent of the impervious surface of a previously existing development, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design.

(c) Where a redevelopment project in the categories specified above results in an increase of less than 50 percent of the impervious surface of a previously existing development, only runoff from the new and/or replaced impervious surface of the project must be included in the treatment system design.

(d) The Permittee shall apply the low impact development runoff standards to all applicable projects, both private development requiring municipal permits and public projects.

(1) Private Development Projects

(i) Discretionary Projects - If a project receives a vesting tentative map or development agreement, the Permittee shall require the project to adhere to the version of the low impact development runoff standards that is most current at the time of vesting tentative map or development agreement approval. The Permittee shall require all applicable development projects, which require discretionary approvals that do not receive a vesting tentative map or development agreement or which have an expired vesting tentative map or development agreement, to adhere to the version of the low impact development runoff

standards that is most current at the time of each discretionary approval. Discretionary approvals include, but are not limited to, the following: general plan amendment, tract or parcel map, subdivision map, zoning change or rezoning, tentative map, conditional use permit, or other development approval.

(ii) Ministerial Projects - The Permittee shall require all applicable projects, which do not require discretionary approvals, to adhere to the version of the low impact development runoff standards that is most current at the time the project application for the ministerial approval is complete. Ministerial approvals include, but are not limited to, building permits, site engineering improvements, and grading permits. If the applicable project receives multiple ministerial approvals, the Permittee shall require that project to adhere to the version of the low impact development runoff standards that is most current at the time the project application for the first ministerial approval is complete.

(2) Public Development Projects - The Permittee shall develop and implement an equivalent approach, to the approach used for private development projects, to apply the most current version of the low impact development runoff standards to applicable public development projects.

(e) Road Projects - Any of the following types of road projects that create 5,000 square feet or more of newly constructed contiguous impervious surface and that are public road projects and/or fall under the building and planning authority of a Permittee shall comply with Low Impact Development Standards except that treatment of runoff of the 85th percentile that cannot be infiltrated onsite shall follow USEPA guidance regarding green infrastructure to the maximum extent practicable. Types of projects include:

(1) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.

(2) Widening of existing streets or roads with additional traffic lanes.

(i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design.

(ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road, only the runoff from new and/or replaced impervious surface of the project must be included in the treatment system design. However, if the runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system

must be designed and sized to treat runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid, the offsite treatment system or in-lieu fees shall address only the runoff from the added traffic lanes.

(3) Specific exclusions are:

(a) Sidewalks built as part of new streets or roads and built to direct storm water runoff to adjacent vegetated areas.

(b) Bicycle lanes that are built as part of new streets or roads that direct storm water runoff to adjacent vegetated areas.

(c) Impervious trails built to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.

(d) Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.[15]

E.12.d.2 Low Impact Development Standards

(i) **Task Description** – The Permittee shall implement low impact development standards to effectively reduce runoff from Regulated Projects.

(ii) **Implementation Level** - The Permittee shall adopt and implement requirements and standards to ensure design and construction of development projects achieve LID objectives for runoff reduction, storm water treatment, and baseline hydromodification management. The Permittee shall require each Regulated Project to provide a map or diagram dividing the entire project site into discrete Drainage Management Areas (DMAs), and to account for the drainage from each DMA. The Permittees shall (1) implement source controls and site design measures to the extent technically feasible to reduce the amount of runoff and (2) any remaining runoff from impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or biotreat runoff.

(1) **Source Control Requirements** – The following standard permanent and/or operational source control BMPs shall be adopted and implemented to address the following pollutant sources, as applicable:

(a) Accidental and illicit discharges to on-site storm drain inlets.
(b) Interior floor drains and elevator shaft sump pumps
(c) Interior parking garages
(d) Indoor and structural pest control
(e) Landscape/outdoor pesticide use
(f) Pools, spas, ponds, decorative fountains, and other water features
(g) Restaurants, grocery stores, and other food service operations
(h) Refuse areas
(i) Industrial processes

[15] Permeable surfaces include pervious concrete, porous asphalt, unit pavers, and granular materials.

(j) Outdoor storage of equipment or materials
(k) Vehicle and equipment cleaning
(l) Vehicle and equipment repair and maintenance
(m) Fuel dispensing areas
(n) Loading docks
(o) Fire sprinkler test water
(p) Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources

(2) **Site Design Measures** - The following site design measures shall be used to reduce the amount of runoff, to the extent technically feasible, for which retention and treatment is required. The methods are based on the objective of achieving infiltration, evapotranspiration and/or harvesting/reuse of the 85th percentile rainfall event.

(a) Stream Setbacks and Buffers
(b) Soil Quality Improvement and Maintenance
(c) Tree planting and preservation
(d) Rooftop and Impervious Area Disconnection
(e) Porous Pavement
(f) Green Roofs
(g) Vegetated Swales
(h) Rain Barrels and Cisterns

(3) **Storm Water Treatment Measures and Baseline Hydromodification Management Measures -** Runoff from remaining impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or biotreat the amount of runoff specified in below. The facilities must be demonstrated to be at least as effective as a bioretention system with the following design parameters.

(a) Maximum surface loading rate of 5 inches per hour, based on the flow rates calculated. A sizing factor of 4% of tributary impervious area may be used.
(b) Minimum surface reservoir volume equal to surface area times a depth of 6 inches.
(c) Minimum planting medium depth of 18 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used.
(d) Subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.
(e) Underdrain with discharge elevation at top of gravel layer.
(f) No compaction of soils beneath the facility, or ripping/loosening of soils if compacted.
(g) No liners or other barriers interfering with infiltration.

(h) Appropriate plant palette for the specified soil mix and maximum available water use.

a. **Alternative Designs —** Facilities of a different design than in (2) may be permitted if the following measures of equivalent effectiveness are demonstrated:

(a) Equal or greater amount of runoff infiltrated or evapotranspired
(b) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment
(c) Equal or greater protection against shock loadings and spills
(d) Equal or greater accessibility and ease of inspection and maintenance

b. **Allowed Variations for Special Site Conditions** - The bioretention criteria in (2) may be adjusted for special site conditions as follows:

(a) Facilities located within 10 feet of structures may incorporate an impermeable cutoff wall between the facility and the structure.
(b) Facilities with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may incorporate an impermeable liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a “flow-through planter”).
(c) Facilities located in areas of high groundwater, or where connection of underdrain to a surface drain or to a subsurface storm drain are infeasible, may omit the underdrain.

c. **Exceptions to Requirements for LID Facilities** - Contingent on a demonstration that use of bioretention or a facility of equivalent effectiveness is infeasible, tree-box-type biofilters or in-vault media filters may be used for the following categories of Regulated Projects:

(a) Projects creating or replacing an acre or less of impervious area, and located in a designated pedestrian-oriented commercial district, and having at least 85% of the entire project site covered by permanent structures;
(b) Facilities receiving runoff solely from existing (pre-project) impervious areas,
(c) Smart growth credits

Tree-box-type biofilters and in-vault media filters shall meet the requirements of above storm water treatment measures requirements. By May 15, 2014, each permittee shall adopt or reference appropriate performance criteria for tree-box-type biofilters and in-vault media filters.

Reopener for LID requirements - The Executive Director of the State Water Board may evaluate newly available technical data and other information regarding the effectiveness of source control, runoff reduction, stormwater treatment, and baseline hydrograph modification management measures and may propose to the State Water Board revisions to these criteria as needed to ensure the measures and facilities installed under this Permit minimize pollutant loadings and hydromodification impacts.

d. **Numeric Sizing Criteria for Storm Water Retention and Treatment**

The Permittees shall require facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the following hydraulic sizing design criteria:

(1) Volumetric Criteria

a. The maximized capture storm water volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, approximately the 85th percentile 24-hour storm runoff event); or

b. The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology in Section 5 of the California Stormwater Quality Association's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) Flow-based Criteria

a. The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

b. The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

(iii) **Reporting** – For each Regulated Project approved, the following information shall be completed and be available annually in the Annual Report:

(a) Project Name, Number, Location (cross streets), and Street Address;

(b) Name of Developer, Phase No. (if project is being constructed in phases, each phase shall have a separate entry), Project Type

(e.g., commercial, industrial, multiunit residential, mixed-use, public), and description;
(c) Project watershed(s);
(d) Total project site area and total area of land disturbed;
(e) Total new impervious surface area and/or total replaced impervious surface area;
(f) If a redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
(g) Status of project (e.g., application date, application deemed complete date, project approval date);
(h) Source control measures;
(i) Site design measures;
(j) All post-construction storm water treatment systems installed onsite, at a joint storm water treatment facility, and/or at an offsite location;
(k) O&M responsibility mechanism for the life of the project.
(l) Water quality treatment calculations used;
(m) Off-site compliance measures for Regulated Project (if applicable)
(n) Additional (watershed-specific) hydromodification standards used

E.12.e. Hydromodification Management

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement Hydromodification Management procedures. Hydromodification management projects are Regulated Projects that create and/or replace one acre or more of impervious surface. A project that does not increase impervious surface area over the pre-project condition is not a hydromodification management project.

(ii) **Implementation Level** - The Permittee shall implement the following Hydromodification Standard:

(a) Post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Coast Ranges
- Klamath Mountains
- Cascade Range
- Modoc Plateau
- Basin and Range
- Sierra Nevada
- Great Valley

(b) Post-project runoff shall not exceed estimated pre-project flow rate for the 5-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Transverse Ranges
- Peninsular Ranges
- Mojave Desert
- Colorado Desert

Figure 1. California Geomorphic Provinces

(iii) **Reporting –** By the third year annual report, complete and have available verification that the Hydromodification Management procedures are being implemented.

E.12.f. Implementation Strategy for Watershed Process – Based Storm Water Management

(i) **Task Description –** Watershed Management Zones (WMZs) [16] established and delineated by the State Water Board will include the following watershed processes.

(a) Overland flow – precipitation reaching the ground surface that does not immediately soak in and runs over the land surface;
(b) Infiltration and Groundwater Recharge– infiltration to support baseflow to wetlands and surface waters, and deep vertical infiltration to groundwater;
(c) Interflow – shallow subsurface flow (usually within 3 to 6 feet of the surface) that provides a transition between the rapid response from surface runoff and much slower stream discharge from deeper groundwater;
(d) Evapotranspiration – returning water to the atmosphere by direct evaporation from soil and vegetation and by the active transpiration by vegetation;
(e) Delivery of Sediment to Waterbodies – sediment delivery into the channel network critical to the maintenance of habitat features in fluvial systems (excessive sediment loading from watershed disturbance can also be a significant source of degradation);
(f) Delivery of Organic Matter to Waterbodies – introduction of allochthonous organic material into the stream network, either as fine organic material suitable for food or as coarse organic material that can provide physical structure and hydraulic resistance in the channel, critical for maintaining aquatic life;
(g) Chemical/Biological Transformations – the suite of watershed processes that alter the chemical composition of water as it passes through the soil column on its path to (and after entry into) a receiving water

Within the second year of the effective of the permit, The State and Regional Water Boards will determine whether the requirements in E.12.d and E.12.e. are protective of the watershed processes identified below or if modified criteria should apply. The Regional Boards may also, following evaluation of watershed processes, approve in-lieu programs allowing applicants to financially participate in projects that protect or enhance watershed processes as an alternative to on-site compliance.

[16] A Watershed Management Zone (WMZ) is a combination of a Physical Landscape Zone (PLZ, based on surficial geology and slope) and direct receiving water type. Key watershed processes potentially impacted by urbanization (e.g., infiltration and groundwater recharge) are derived from each PLZ-receiving water combination.

Permittees shall work collaboratively with the appropriate Regional Water Board to incorporate watershed process-based numeric criteria for new and redevelopment projects.

(ii) **Implementation Level –**

(a) Enforceable Mechanisms – Within the third year of the effective of the permit, develop and/or modify enforceable mechanisms that will effectively implement the requirements in E.12.d and e (if necessary). Enforceable mechanisms may include municipal codes, regulations, standards, and specifications. The Permittee shall:

(1) Conduct an analysis of all applicable codes, regulations, standards, and/or specifications to identify modifications and/or additions necessary to fill gaps and remove impediments to effective implementation of parcel-scale development requirements.

(2) Approve new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement the requirements in E.12.d and e (if necessary) for protecting watershed processes affected by storm water in new and redevelopment projects.

(3) Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects.

(b) The Permittee shall develop and make available specific guidance for LID BMP design and compliance with Watershed Process Management requirements

(c) The Permittee shall complete a Tracking Report indicating the Permittee's accomplishments in education and outreach supporting implementation of LID and Watershed Process Management requirements for new and redevelopment projects.

(iii) **Reporting** – By the third year Annual Report, complete and have available a strategy for implementing numeric criteria for protecting watershed processes affected by storm water in new and redevelopment projects.

E.12.g. Operation and Maintenance (O&M) of Post-Construction Storm Water Management Measures

(i) **Task Description** –Within the second year of the effective date of the permit, the Permittee shall implement an O&M Verification Program for new development projects regulated under this Order

(ii) **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:

(a) All Regulated Projects shall at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

(1) The project proponent's signed statement accepting responsibility for the O&M of the installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

(2) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

(3) Written text in project deeds, or conditions, covenants and restrictions for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity; or

(4) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed treatment system(s) and hydromodification control(s) (if any) to the project owner(s) or the Permittee.

(b) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed treatment systems and hydromodification management controls.

(c) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee for the sole purpose of performing O&M inspections of the installed treatment system(s) and hydromodification control(s) (if any).

(d) A written plan and implementation of the plan that describes O&M (including inspection) of all Regional Projects and regional controls that are Permittee-owned and/or operated.

(e) A database or equivalent tabular format of all Regulated Projects (public and private) that have installed treatment systems. This database or equivalent tabular format shall include the following information for each Regulated Project:

(1) Name and address of the Regulated Project;
(2) Specific description of the location (or a map showing the location) of the installed treatment system(s) and hydromodification control(s) (if any);
(3) Date(s) that the treatment system(s) and hydromodification controls (if any) is/are installed;
(4) Description of the type and size of the treatment system(s) and hydromodification control(s) (if any) installed;
(5) Responsible operator(s) of each treatment system and hydromodification control (if any);

(6) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and hydromodification control(s) (if any) by the Permittee; and
(7) Any problems and corrective or enforcement actions taken.
(8) Maintenance Approvals: The Permittee shall ensure that systems and hydromodification controls installed at Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a treatment system or hydromodification control has worked diligently and in good faith with the appropriate State and federal agencies and the Permittee to obtain approvals necessary to complete maintenance activities for the treatment system or hydromodification management control, but these approvals are not granted, the Permittee shall be deemed to be in compliance with this Provision.

(iii) **Reporting -**

(a) For each Regulated Project inspected during the reporting period (fiscal year) the following information shall be complete and made available in tabular form as part of each year's Annual Report:

(1) Name of facility/site inspected.
(2) Location (street address) of facility/site inspected.
(3) Name of responsible operator for installed storm water treatment systems and hydromodification management controls.
(4) Inspection details including: Date of inspection, type of inspection (e.g., initial, annual, follow-up, spot), type(s) of storm water treatment systems inspected (e.g., swale, bioretention unit, tree well, etc.) and an indication of whether the treatment system is an onsite, joint, or offsite system.
(5) Type of hydromodification management controls inspected.
(6) Inspection findings or results (e.g., proper installation, proper O&M, system not operating properly because of plugging, bypass of storm water because of improper installation, maintenance required immediately, etc.).
(7) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order).

(b) On an annual basis, before the wet season, prepare a list of newly installed (installed within the reporting period) storm water treatment systems and hydromodification management controls to the local mosquito and vector control agency and the appropriate Regional Water Board. This list shall include the facility locations and a description of the storm water treatment measures and hydromodification management controls installed.

(c) Each Permittee shall complete and have available the following information in the Annual Report:

(1) A discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or hydromodification management controls. This discussion shall include a general comparison to the inspection findings from the previous year.

(2) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

E.12.h. Post-Construction Best Management Practice Condition Assessment

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall inventory and assess the maintenance condition of structural post-construction BMPs (including BMPs used for flood control) within the Permittee's jurisdiction.

(ii) **Implementation Level** – The Permittee shall develop and implement a plan to inventory, map, and determine the relative maintenance condition of structural post-construction BMPs. Maintenance condition shall be determined through a self-certification program where Permittees require annual reports from authorized parties demonstrating proper maintenance and operations. The plan shall include:

a. An inventory and map of existing structural post-construction BMPs, in GIS if available.
b. Assessments of the self-certification program annual reports. Assessment shall include a ranking of structural BMPs and verification that BMPs are operating to remove pollutants as designed. Regional BMPs should receive higher priority than lot-scale BMPs, and BMPs designed to remove pollutants for which receiving water is impaired should receive priority attention than other BMPs.
c. Appropriate escalating enforcement based on the Permittee Enforcement Response Plan to ensure proper maintenance of BMPs and submittal of self-certification annual reports.
d. Self-Certification Annual Reports. At a minimum, the self-certification annual reports shall include:

    1. Field observations to determine the effectiveness of the structural post construction BMPs in removing pollutants of concern from storm water runoff and/or reducing hydromodification impacts as designed.
    2. Long-term plan for conducting regular maintenance of BMPs, including the frequency of such maintenance.

(iii) **Reporting** – By the third year Annual Report and subsequently thereafter, complete and have available a summary of the self-certification annual report assessments and enforcement actions taken for failure to operate and maintain BMPs as designed.

E.12.i. Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region

Central Coast small MS4s subject to Provision E of this Order shall comply with the Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region (Central Coast Post-Construction Requirements) developed pursuant to the Central Coast Water Board Joint Effort

for Hydromodification Control[17], in place of complying with the requirements set forth in Provision E.12, except for Provisions E.12.j [Planning and Building Document Updates] and E.12.d.i.a [Source Control Requirements]. Central Coast small MS4s subject to Provision E of this Order shall comply with the following implementation time schedules:

a. Central Coast small MS4s subject to Provision E of this Order, whom participated in the Central Coast Water Board Joint Effort for Hydromodification Control, shall implement the Central Coast Post-Construction Requirements pursuant to the implementation schedule approved by the Central Coast Water Board.
b. Central Coast small MS4s subject to Provision E of this Order, whom did not participate in the Central Coast Water Board Joint Effort for Hydromodification Control, shall implement the Central Coast Post-Construction Requirements within the first year of the effective date of this Order.

Reporting – Central Coast small MS4s subject to Provision E of this Order shall adhere to the reporting requirements prescribed in the Central Coast Post-Construction Requirements by submitting reporting information via this Order's online reporting system. If this Order's online reporting system cannot accommodate the Central Coast Post-Construction Requirements reporting, Central Coast small MS4s shall electronically submit a separate report to the Central Coast Water Board on the due dates of this Order's Annual Reports to report on information pursuant to the Central Coast Post-Construction Requirements.

E.12.j. Planning and Building Document Updates

(i) **Task Description** – The Permittee shall modify, at a minimum, general plans, specific plans, policies, zoning, codes, regulations, standards, and/or specifications to ensure watershed process protection is fully considered in land planning decisions that impact stormwater management of existing and future development.

(ii) **Implementation Level** –

a. Within the first year of the effective date of this Order, the Permittee shall complete each action item listed below to revise planning and building requirements for development projects subject to the post-construction requirements in Section E.12.

[17] The Central Coast Water Board Joint Effort for Hydromodification Control is an effort to 1) create a methodology for developing post-construction stormwater management criteria, 2) derive criteria by applying the methodology, and 3) support implementation of the resulting criteria throughout the Central Coast for new and redevelopment projects. The effort includes oversight by the Central Coast Water Board; a team of subject area experts to execute the scope of work; and participating municipalities. This project is a key step in the Central Coast Water Board's progressive, stepwise process to protect watershed processes affected by urban stormwater runoff, and similarly, the State Board's goals in its Strategic Plan for statewide healthy watersheds.

i. The Permittee shall conduct an analysis of all applicable codes, regulations, standards, and/or specifications to identify modifications and/or additions necessary to correct gaps and impediments impacting effective implementation of post-construction requirements.
ii. The Permittee shall modify codes, regulations, standards, and/or specifications as applicable to fill identified gaps and remove identified impediments to effective implementation of post-construction requirements.
1. The Permittee shall review and modify planning and building requirement language so that it includes, at a minimum:
a. Provisions for protecting and/or utilizing groundwater recharge zones;
b. Maintenance agreements or easements for stormwater management-related landscaping features;
c. Reduced parking ratios from existing Permittee standards to take advantage of shared parking opportunities and mixed use;
d. Parking allowed in building setbacks; and
e. Reduced parking requirements for any assisted living, low income housing, or other housing units likely to have lower parking demand.
2. The Permittee shall review planning and building requirement language and include:
a. Language that allows alternatives to conventional curb, gutter, and subgrade enclosed pipe runoff conveyance as required improvements;
b. Language that allows shared drainage among properties and shared public/private drainage handling and treatment;
c. Language that allows pervious alternatives to driveway paving materials such as asphalt, Portland cement, or some other highly impervious material;
d. Language that allows flexible building setbacks;
e. Landscaping requirements that promote infiltration, in lieu of elevated landscaped beds, compaction specifications, or required materials; and
f. Language that promotes narrower rights of way and the use of LID techniques in rights of way.

b. By year three of the Permit effective date, the Permittee shall evaluate their policies for approval of general plan updates and specific plans, or other master planning documents, and zoning, to:
i. Identify barriers to using development methods that protect watershed processes;
ii. Identify gaps in development methods for the promotion of watershed process protection; and

iii. Identify how the following design principles can be incorporated into their policies and zoning:
    1. Natural Systems and Green Infrastructure
    2. Infill and Redevelopment
    3. Compact Design
    4. Use Mix
    5. Streets and Mobility
    6. Parking

iv. By year four of the Permit effective date, the Permittee shall revise their policies for approval of general plan updates and specific plans, or other master planning documents, and zoning, to remove barriers and fill gaps and incorporate design principles identified by the Permittee.

(iii) **Reporting** –

a. By the first year Annual Report, the Permittee shall submit documentation to demonstrate they modified all applicable codes, regulations, standards, and/or specifications pursuant to E.12.j.ii.a.

b. By the third year Annual Report, the Permittee shall submit a proposal for modifying their policies for approval of general plan updates and specific plans, or other master planning documents, and zoning.

c. By the fourth year Annual Report, the Permittee shall submit documentation to demonstrate they have modified all applicable policies for approval of general plan updates and specific plans, or other master planning documents, and zoning.

E.13. WATER QUALITY MONITORING

(i) All Permittees that discharge to an ASBS and are covered by an Ocean Plan exemption shall comply with the monitoring requirements described in the terms, prohibitions and special conditions in Attachment C.

(ii) All Permittees that are assigned a wasteload allocation or identified as a responsible party in a TMDL approved by the Office of Administrative Law shall comply with the monitoring requirements included in Attachment G and consult with the Regional Water Board within six months of the effective date of the permit to determine the monitoring study design and a monitoring implementation schedule. Permittees shall implement TMDL monitoring as specified by the Regional Water Board Executive Officer.

(iii) All Permittees that discharge to waterbodies listed as impaired on the 303(d) list shall consult with the Regional Water Board within six months of the effective date of the permit to assess whether monitoring is necessary and if so, determine the monitoring study design and a monitoring implementation schedule. Permittees shall implement 303(d) monitoring as specified by the Regional Water Board Executive Officer.

(iv) Traditional Small MS4 Permittees with a population greater than 50,000 listed in Attachment A that are not already conducting ASBS, TMDL or 303(d) monitoring efforts shall participate in one of the following monitoring programs, subject to Regional Water Board Executive Officer approval:

a) E.14.a. Regional Monitoring

b) E.14.b. Receiving Water Monitoring

c) E.14.c. Special Studies

E.13.a. Regional Monitoring

Permittees may choose to comply with any of the monitoring requirements in sections E.13.i-iii through a collaborative, regional effort to conduct the required monitoring in their jurisdictions. For those Permittees not subject to the monitoring requirements of section E.13.i-iii, but subject to monitoring requirements of section E.13.iv, regional monitoring shall target high priority water quality problems and assessment of Permittee program effectiveness. Where all or a majority of the Permittees collaborate to conduct water quality monitoring, this shall be considered a regional monitoring collaborative. Regional monitoring programs shall address the following five core management questions[18]:

1) Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
2) What is the extent and magnitude of the current or potential receiving water problems?
3) What is the relative urban runoff contribution to the receiving water problem(s)?
4) What are the sources to urban runoff that contribute to the receiving water problem(s)?
5) Are conditions in receiving waters getting better or worse?

Regional monitoring programs shall be reviewed and approved by the Executive Officer of the applicable Regional Board.

Where an existing collaborative body has initiated plans, before the adoption of this Order, to conduct monitoring that achieves Section compliance, the Permittee may request the Regional Board Executive Officer tailor compliance dates to synchronize with such efforts. Additionally, existing regional water monitoring efforts shall be reviewed and approved by a Regional Board Executive Officer.

[18] The five core management questions are based on the Stormwater Monitoring Coalition's Model Monitoring Technical Committee Technical Report # 419: Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California.

E.13.b. Receiving Water Monitoring

E.13.b.1. Receiving Water Monitoring at Urban/Rural Interface

(i) **Task Description –** Within the second year of the effective date of the permit, the Permittee shall develop and implement a receiving water monitoring program to determine if new development LID BMPs are effective at minimizing degradation in waterways. The monitoring program shall address new development LID BMP effectiveness at protecting beneficial uses including Aquatic Life, Recreation and Fishing.

(ii) **Implementation Level -** The Permittee shall, at a minimum:

a) Within the first year of the effective date of the permit, identify one characteristic waterway in a HUC 12 level watershed planned for development in the near future that traverses an urban/rural interface, using the 2010 Census Data and urban area maps.

b) Within the first year of the effective date of the permit, establish a permanent monitoring station at the identified urban/rural interface monitoring site.

c) Within the second year of the effective date of the permit, annually monitor three storm events, with correlations made to flow records if they exist. Bioassessment monitoring shall be conducted annually during the Fall index period. Monitoring parameters and procedures shall be conducted as required in Table 3:

Table 3. Monitoring Parameters and Procedures

Parameter	Condition	Beneficial Use	Procedure
Flow measurements	Physical Habitat	Aquatic Life	Derive from stream gage
Bioassessment	Physical Habitat and Water Quality	Aquatic Life	SWAMP[19]
Channel Cross Sections	Physical Habitat	Aquatic Life	3 downstream of point of discharge
Pebble Counts	Physical Habitat	Aquatic Life	Grid Sampling[20]
Pyrethroids (sediment)	Water Quality	Aquatic Life	A specific method is

[19] Ode, P.R. 2007. Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California, California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised (http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/standard-operating-procedures). Permittees may coordinate with Water Board staff to modify their sampling procedures if these referenced procedures change during the Permit term.

[20] Grid sampling protocol can be found in Bunte, Kristin and Steven R. Abt. 2001. Sampling Frame for Improving Pebble Count Accuracy in Coarse Gravel-bed Streams. *Journal of the American Water Resources Association*. 37(4): 1001 -1014.

Bacteria	Water Quality	Recreation	not required. Analyses must meet the measurement quality objectives (MQOs) and holding times that appear in Tables A25 and B42 of the 2008 Surface Water Ambient Monitoring Program Quality Assurance Program Plan (QAPrP)[21]

d) Establish a monitoring fund into which all new development contributes on a proportional basis (% development fee, size/number of lots, etc.). Funding overseen by municipalities or coalition of municipalities

(iii) **Reporting –** By the second year Annual Report and annually thereafter, the Permittee shall complete and have available a report that includes a summary of data collections and discussion of monitoring program results;

1) The purpose of the monitoring and a brief description of the study design and rationale.
2) A brief description of sampling protocols and analytical methods.
3) Sample location description, including water body name, water body segment and latitude and longitude coordinates.
4) Sample identification, collection date, media (e.g., water, filtered water, bed sediment, tissue).
5) Concentration detected, measurement units and detection limits.
6) Assessment, analysis and interpretation of data for each monitoring parameter.

E.13.b.2. Receiving Water Monitoring in Urban Area

(i) **Task Description –** Within the second year of the effective date of the permit, the Permittee shall develop and implement a receiving water monitoring program to determine if urbanized waterway conditions are protective of water beneficial uses including Aquatic Life and Recreation.

(ii) **Implementation Level -** The Permittee shall, at a minimum:

[21] Surface Water Ambient Monitoring Program Quality Assurance Program Plan; Moss Landing Marine Laboratories, Moss Landing, CA, 2008. URL: http://swamp.mpsl.mlml.calstate.edu/resources- and- downloads/quality-assurance-program-plan

a) Within the first year of the effective date of the permit, identify one characteristic waterway at the bottom of a HUC 12 watershed within an urbanized area.

b) Within the first year of the effective date of the permit, establish a permanent monitoring station at the identified urbanized area waterway.

c) Within the second year of the effective date of the permit, annually monitor three storm events, with correlations made to flow records if they exist. Bioassessment monitoring shall be conducted annually during the Fall index period Urban area monitoring parameters and procedures shall be conducted as required in Table B:

Table 4: Receiving Water Monitoring in Urbanized Area

Parameter	**Condition**	**Beneficial Use**	**Sampling Method/Protocol**
PHAB assessment	Physical Habitat	Aquatic Life	SWAMP Standard Operating
Pyrethroids (sediment)	Water Quality	Aquatic Life	A specific method is not required. Analyses must meet the measurement quality objectives (MQOs) and holding times that appear in Tables A25 and B42 of the 2008 Surface Water Ambient Monitoring Program Quality Assurance Program Plan (QAPrP)
Bacteria	Water Quality	Recreation and Aquatic Life	
Dissolved Oxygen and Temperature	Water Quality	Aquatic Life	
Metals	Water Quality	Aquatic Life	

(iii) **Reporting –** By the second year Annual Report and annually thereafter, the Permittee shall complete and have available a report that includes a summary of data collections and discussion of monitoring program results;

1) The purpose of the monitoring and a brief description of the study design and rationale.
2) A brief description of sampling protocols and analytical methods.
3) Sample location description, including water body name, water body segment and latitude and longitude coordinates.
4) Sample identification, collection date, media (e.g., water, filtered water, bed sediment, tissue).

5) Concentration detected, measurement units and detection limits.
6) Assessment, analysis and interpretation of data for each monitoring parameter.

E.13.c. Special Studies

(i) **Task Description –** Within the first year of the effective date of the permit, the Permittee shall develop and implement a special study monitoring program to assess and evaluate the effectiveness of projects or storm water program components designed to reduce specific water quality pollutants that are causing or contributing to beneficial use impairment. The special studies may include, but are not limited to:

a) Assessment of effectiveness of habitat enhancement efforts

b) Assessment of effectiveness of low impact development pilot projects

c) Assessment of effectiveness of stream restoration projects

d) Assessment of effectiveness of other projects or storm water program components through pollutant load reduction quantification and/or discharge water quality monitoring

(ii) **Implementation Level –** The Permittee shall develop and implement a special study plan and shall submit to an applicable Regional Board for review and approval. Within the second year of the effective date of the permit, the Permittee shall begin implementation of the special study plan.

(iii) **Reporting –** By the second year Annual Report, complete and have available a report that summarizes baseline data collection, project/study design, post-project/study data and a discussion of program/study pollutant reduction effectiveness.

E.14. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT

E.14.a. Program Effectiveness Assessment and improvement Plan

(i) **Task Description -** The Permittee shall develop and implement a Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. The Program Effectiveness Assessment and Improvement Plan will assist the Permittee to document compliance with permit conditions and to adaptively manage its storm water program and make necessary modifications to the program to improve program effectiveness at reducing pollutant loads, achieving the MEP standard, and protecting water quality. The Program Effectiveness Assessment and Improvement Plan shall identify the strategy used to gauge the effectiveness of each BMP and program implementation as a whole. The annual effectiveness assessments will help identify potential modifications to the program to ensure long-term effectiveness.

(ii) **Implementation Level** - The Program Effectiveness Assessment and Improvement Plan may be modeled upon the most recent version (if applicable) Municipal Storm Water Program Effectiveness Assessment Guidance (CASQA, May 2007) or equivalent.

(a) The Program Effectiveness Assessment and Improvement Plan shall include the following elements, at a minimum:
(1) Documentation of the level of implementation of storm water program elements
(2) Identification and targeting of Target Audience(s)
(3) Assessment of BMP performance at achieving Outcome Levels (including expected pollutant removal efficiency and BMP Condition
(4) Assessment of pollutant source reductions achieved by individual BMPs
(5) Quantification of pollutant loads and pollutant load reductions achieved by the program as a whole
(6) MS4 discharge quality, where available, including analysis of the data
(7) Receiving water quality data, including analysis of the data

(b) The Program Effectiveness Assessment and Improvement Plan shall assess BMP and program effectiveness in terms of the following Outcome Levels:
(1) Storm Water Program Activities
(2) Behavior
(3) Pollutant Load Reductions
(4) MS4 Discharge Quality (where assessment is supported by MS4 discharge quality data)
(5) Receiving Water Conditions

(c) The Program Effectiveness Assessment and Improvement Plan shall identify assessment methods for privately owned BMPs.

(d) The Program Effectiveness Assessment and Improvement Plan shall identify assessment methods the Permittee will use to quantitatively assess BMP performance at reducing pollutant loads wherever feasible, using the following or equivalent methods:

(1) Direct quantitative measurement of pollutant load removal for BMPs that lend themselves to such measurement (e.g., measuring sediment collected through street-sweeping activities);

(2) Science-based estimates of pollutant load removal for BMPs where direct measurement of pollutant removal is overly challenging (e.g., removal of heavy metals through a bioswale);

(3) Direct quantitative measurement of behaviors that serve as proxies of pollutant removal or reduction (e.g., the percentage of construction sites demonstrated by inspection to be in compliance with permit conditions); or

(4) Visual comparison (e.g., using photographs to compare the amount of trash in a creek between one year and the next).

(e) The Program Effectiveness Assessment and Improvement Plan shall ask and answer the following Management Questions for each BMP or group of BMPs for which answers to Management Questions can be based on quantitative data appropriate to the question being answered.

(1) Was the BMP or group of BMPs implemented in accordance with the permit requirements? The Permittee shall develop quantitative data using the following or equivalent methods:

(i) Confirmation – Documenting whether an activity or task has been completed, expressed as positive or negative outcome (i.e., yes or no)

(ii) Tabulation – Simple accounting expressed in absolute (e.g., number of people participating), or relative terms (e.g. percent increase in recycled household hazardous waste)

(2) To what extent did the BMP or group of BMPs change the target audience's behavior?. The Permittee shall develop quantitative data using the following or equivalent methods:

(i) Surveys - Surveys or interviews to discern knowledge, attitudes, awareness, behavior of specific population, etc.

(ii) Interviews – Interviews of site personnel to discern awareness and behavior

(ii) Inspections - Inspections or site visits to directly observe or assess a practice.

(3) To what extent did the BMP or group of BMPs reduce pollutant loads from their sources to the storm drain system?

(f) The Program Effectiveness Assessment and Improvement Plan shall include Water Quality Monitoring Data, where available, to answer the following Management Questions and assess the effectiveness of BMPs and the overall storm water program:

(1) To what extent did implementation of the BMP, group of BMPs, or storm water program enhance or change the urban runoff and discharge quality?

(2) To what extent did implementation of the BMP, group of BMPs, or storm water program enhance or change receiving water quality?

(3) Did exceedance(s) of water quality objectives or water quality standards persist notwithstanding implementation of the storm water program?

The Program Effectiveness Assessment and Improvement Plan shall include documentation of the effectiveness of BMPs implemented to reduce the discharge of pollutants to the MS4 to the MEP and protect water quality.

(iii) **Reporting** – By the second year Annual Report complete and submit the Program Effectiveness Assessment and Improvement Plan. The Plan shall include the strategy the Permittee will use to assess the effectiveness of the program, the specific measures the Permittee will use to assess the effectiveness of BMPs and/or groups of BMPs, and how the Permittee will use the information obtained through effectiveness assessment to modify individual BMPs and the program as a whole to increase short and long-term effectiveness. In subsequent Annual Reports, describe implementation of the Program Effectiveness Assessment and Improvement Plan, summarize data obtained through effectiveness assessment measures and the short and long-term progress of the storm water program, and provide an analysis of the data to improve program effectiveness, to achieve the MEP standard, protect water quality, and to document the Permittee's compliance with permit conditions. Permittees that have a Program Effectiveness Assessment and Improvement Plans, or equivalent, approved by the Regional Board, or that have a schedule approved by the Regional Board to develop and implement such a Plan, shall adhere to the Plan and/or schedule approved by the Regional Board unless otherwise directed by the Regional Board. By the fifth year annual report, complete and submit an analysis of the effectiveness of modifications made at improving BMP and/or program effectiveness.

E.14.b. Municipal Watershed Pollutant Load Quantification

(i) **Task Description –** The Permittee shall quantify annual subwatershed pollutant loads. At a minimum, annual loads for the following constituents shall be quantified:

(a) sediment (measured as total suspended solids or suspended sediment concentration)
(b) fecal coliform bacteria
(c) total phosphorus
(d) total nitrogen
(e) cadmium
(f) chromium

(g) copper
(h) lead
(i) nickel
(j) zinc
(k) trash

Additional pollutants of concern as identified by the Permittee in consultation with the Regional Boards shall also be quantified.

In addition, any reductions associated with BMPs and other program elements shall be quantified. The Permittee shall integrate this information into its assessment of program effectiveness[22].

(ii) **Implementation Level** – The Permittee shall use the Center for Watershed Protection's Watershed Treatment Model or other equivalent simplified spreadsheet method to calculate annual runoff, pollutant loads, and BMP removal efficiency. The Permittee shall use pollution concentration data from the National Stormwater Quality Database, local monitoring data for pollutant loads and BMP removal efficiency, or other centralized databases (e.g., International Storm Water BMP Database[23]). The Permittee shall justify all assumptions used to model BMP pollutant reductions on the basis of appropriate data, and shall recalibrate the model at appropriate intervals by modifying the assumptions on the basis of data collected. In addition, the Permittee shall count pollutant reductions only from treatment BMPs that have been adequately maintained.

(iii) **Reporting** – By the fifth year Annual Report, complete and have available quantification report of annual subwatershed pollutant loads, including the rationale used to model BMP pollutant reductions and the data used to justify the rationale.

E.14.c. Storm Water Program Modifications

(i) **Task Description** –The Permittee shall modify BMPs and/or the program as a whole designed to improve compliance with permit conditions and improve program effectiveness at reducing pollutant loads, achieving the MEP standard, and protecting water quality. The Permittee shall use information gained through effectiveness assessment and MS4 discharge and receiving water monitoring to identify priority areas for program improvement, In addition, the Permittee shall identify and make modifications to BMPs, including new BMPs or modification to existing BMPs, designed to improve effectiveness in each priority area, as specified below. The Permittee shall also evaluate information gained from BMP Condition Assessment

[22] The Permittee shall use the Center for Watershed Protection's guide on Urban Stormwater Retrofit Practices (available as a free download at) or equivalent when identifying retrofit opportunities.
[23] www.bmpdatabase.org

activities to identify BMPs intended to achieve increased pollutant load reductions. The Permittee shall consult with the Regional Water Board in setting expectations for the scope, timing, and frequency of BMP modifications.

(ii) **Implementation Level** – Within the fourth year of the effective date of the permit, the Permittee shall begin implementing BMP and/or program modifications identified in priority program areas. Modifications shall commence with the highest priority program areas. Within the fifth year of the effective date of the permit, the Permittee shall complete modifications to identified priority program areas. Modifications shall include:

(a) Improving upon BMPs that are underperforming
(b) Continuing and expanding upon BMPs that proved to be effective, including identifying new BMPs or modifications to existing BMPs designed to increase pollutant load reductions;
(c) Discontinuing BMPs that may no longer be productive and replacing with more effective BMPs; and
(d) Shifting priorities to make more effective use of resources

(iii) **Reporting –** By the third year Annual Report, complete and submit the list of BMP and/or program modifications the Permittee will make for priority program areas, including identification of priority program areas and the schedule the Permittee will follow to complete identified modifications. By the fourth year Annual Report, complete and submit a summary progress implementing modifications according to the identified schedule. By the fifth year Annual Report, summarize completion of modifications to priority program areas; and annually thereafter, complete and submit a summary of subsequent modifications to the storm water program to improve program effectiveness at reducing pollutant loads, achieving the MEP standard, and protecting water quality.

E.15. TOTAL MAXIMUM DAILY LOADS COMPLIANCE REQUIREMENTS

E.15.a. The Permittee shall comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations section 130.7 for which the Permittee has been assigned a Waste Load Allocation or that has been identified in Attachment G.

E.15.b. Waste Load Allocations (WLA), Load Allocations (LA), effluent limitations, implementation requirements, and monitoring requirements are specified in the adopted and approved Regional Water Board Basin Plans and authorizing resolutions which are incorporated herein by reference as enforceable parts of this General Permit. Applicable Basin Plan amendments and resolutions are identified in Attachment G. Attachment G additionally contains a list of TMDL-specific permit requirements developed by the Regional Boards for compliance with the implementation requirements of the relevant TMDLs. These requirements are an enforceable component of this Order. In some cases, dates are given that

fall outside the term of this General Permit. Compliance dates that have already passed are enforceable on the effective date of this General Permit. Compliance dates that exceed the term of this General Permit are included for reference, and become enforceable in the event that this General Permit is administratively extended.

E.15.c. The Regional Water Boards are directed to review, within six months of the effective date of this Order, the TMDL-specific permit requirements contained in Attachment G and to propose to the State Water Board any appropriate revisions after consultation with the Permittees and State Water Board staff. Any proposed revisions by the Regional Water Boards shall be supported by an explanation of how the proposed TMDL-specific permit requirements are consistent with the assumptions and requirements of applicable WLAs and with the goals of the TMDL. The State Water Board will incorporate any necessary revisions through a reopener. The State Water Board may additionally revise this General Permit through a reopener to incorporate any modifications or revisions to the TMDLs in Attachment G, or to incorporate any new TMDLs adopted during the term of this General Permit that assign a WLA to a regulated Small MS4 or that identify a Regulated Small MS4 as a responsible party. In revising Attachment G, the State Water Board will allow adequate notice and public review.

E.15.d. The Permittee shall complete and report the status of their implementation of the specific TMDL implementation requirements that have been incorporated into the General Permit with each Annual Report via SMARTS. Reporting on TMDL implementation shall include the following information:

(i) A description of BMPs implemented, including types, number, and locations
(ii) An assessment of the effectiveness of implemented BMPs in progressing towards attainment of wasteload allocations within the TMDLs' specified timeframes
(iii) All monitoring data, including a statistical analysis of the data to assess progress towards attainment of wasteload allocations within the TMDLs' specified timeframes
(iv) Based on results of the effectiveness assessment and monitoring, a description of the additional BMPs that will be implemented to attain wasteload allocations within the TMDLs/ specified timeframes

E.15.e. The Permittee shall comply with implementation requirements specified in Category 4b demonstrations associated with Clean Water Act Sections 303d, 306b, and 314 Integrated Reporting and Listing Decisions. Implementation requirements described in Category 4b demonstrations are effective upon Regional Water Board approval of that region's Integrated Reporting and Listing Decisions and associated Category 4b demonstrations. The most recent Integrated Reporting and Listing

Decisions and associated Category 4b demonstrations are available at www.waterboards.ca.gov.

E.16. ANNUAL REPORTING PROGRAM

E.16.a. The Permittee shall use State Water Board SMARTS to certify Annual Reports which verify compliance with all requirements of the General Permit. If a Permittee is unable to certify compliance with a requirement, it must submit in the online Annual Report the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

E.16.b. Permittees shall complete and retain all Annual Report information on the previous fiscal year beginning July 1 and ending June 30. The Annual Reporting requirements are set forth in Provisions E. The Permittee shall retain documentation as necessary to support their Annual Report. The Permittee shall make this supporting information available during normal business hours, unless agreed to by the Regional Water Board's Executive Officer.

E.16.c. Permittees involved in regional programs shall coordinate with the members to identify reporting responsibility. SMARTS will accept only one report on behalf of Permittees involved in a regional program. The one report submitted on behalf of Permittees involved in a regional program must include full reporting and demonstration of compliance for each of the Permittees in the regional program.

F. NON – TRADITIONAL SMALL MS4 PERMITTEE PROVISIONS

F.1 Non-Traditional Small MS4 Categories

The Non-Traditional Small MS4s identified in Attachment B or by a Regional Water Board Executive Officer shall comply with the specific provisions in this Section.

F.2 Security Concerns

Department of Defense and Department of Corrections and Rehabilitation Permittees are exempt from Annual Reporting of any provision in this section that could pose a security risk and/or compromise facility security.

F.3 Maximize Efficiency

Permittees may incorporate the required storm water provisions into already existing programs and leverage existing staff to implement BMPs during its day to day business and operations.

F.4 Equivalent or Existing Document

A Permittee may utilize an equivalent or existing document such as a Standard Operations and Procedures manual, Operation and Maintenance Plan, or Spill Response Plan if that document includes the necessary information required to comply with the provisions of this section.

F.5 PROVISIONS

F.5.a. PROGRAM MANAGEMENT ELEMENT

F.5.a.1 Legal Authority

(i) **Task Description** - Permittee shall have adequate legal authority to meet the requirements of this Order

(ii) **Implementation Level** – Within the second year of the effective date of the permit, the Permittee shall review, revise or adopt new relevant policies, contractual provisions, base orders, resolutions or other regulatory mechanisms to ensure it has at a minimum the legal authority to:

(a) Prohibit and eliminate non-storm water discharges to the MS4. Exceptions to this prohibition may include the non-storm water discharges from B.3 of the draft Order, only if they are considered non-significant contributors of pollutants.

(b) Prohibit and eliminate illicit discharges and illegal connections to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4. Illicit discharges include all non-storm water discharges not otherwise authorized in this Order, including, but not limited to discharges from mobile cleaning and pressure washing operations.

(c) Respond to spills, and prohibit dumping or disposal of materials other than storm water into the MS4.

(d) Require vendors, contractors and operators of commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of BMPs consistent with the California Storm Water Quality Association (CASQA) Best Management Practice Handbooks or equivalent.

(e) Ensure construction site or industrial facility operators provide a Waste Discharge Identification Number for coverage under the CGP and IGP and comply with the appropriate permit.

(1) Review designs and proposals for new development and redevelopment to determine whether adequate BMPs will be installed, implemented, and maintained during construction and after final stabilization (post-construction).

(f) Promptly cease and desist discharges and/or cleanup and abate a discharge, including the ability to:

(1) Effectively require the discharger to abate and clean up their discharge, spill, or pollutant release within 48 hours of notification;

(2) Require abatement, within 30 days of notification, for uncontrolled sources of pollutants that could pose an environmental threat;

(3) Perform the cleanup and abatement work and bill the responsible party, if necessary;

(4) Provide the option to order the cessation of activities until such problems are adequately addressed if a situation persists where pollutant-causing sources or activities are not abated;

(5) Require a new timeframe and notify the appropriate Regional Water Board when all parties agree that clean-up activities cannot be completed within the original timeframe and notify the appropriate Regional Water Board in writing within five business days of the determination that the timeframe requires revision.

(iii) **Reporting** – All Permittees shall submit by the first year online Annual Report, a statement signed by both the Permittee's legal counsel and an authorized signatory certifying the Permittee has adequate legal authority in accordance with 40 CFR 122.26(d)(2)(i)(A-F) to comply with all Order requirements.

F.5.b. EDUCATION AND OUTREACH PROGRAM

F.5.b.1.Compliance Participation Options

All Permittees shall comply with the requirements in this Section by participating in one or more of the following:

(i) Contributing to a countywide storm water program, as determined appropriate by the Permittee members, so that the countywide storm water program conducts education and outreach on behalf of its members; or

(ii) Contributing to a regional education and outreach collaborative effort (a regional education and outreach collaborative effort occurs when all or a majority of the Permittees collaborate to conduct regional education and outreach. Regional education and outreach collaboration includes Permittees defining a uniform and consistent message, deciding how best to communicate the message, and how to facilitate behavioral changes. Then collaboratively apply what is learned through local jurisdiction groups, pooling resources and skills.); or

(iii) Fulfilling education and outreach requirements within their jurisdictional boundaries on their own; or

(iv) A combination of the previous options, so that all requirements are fulfilled.

Reporting – By the first year online Annual Report, the Permittee shall identify which compliance participation option it will use to comply with the public

education and outreach requirements in this Section. For each public education and outreach requirement in this Section that the Permittee will comply with through contribution to a countywide storm water program or regional education and outreach collaborative effort, the Permittee shall include in the first year online Annual Report documentation, such as a written agreement, letter or similar document, which confirms the collaboration with other MS4s.

F.5.b.2.Public Education and Outreach

The public for a Non-traditional MS4 Permittee is considered the following, if applicable:

- Faculty
- Inmates
- Military personnel
- Residents
- Students
- Staff
- Visitors

(i) **Task Description –** The Permittee shall develop and implement a comprehensive storm water public education and outreach program. The public education and outreach program shall be designed to inform the public about storm water pollution and steps that can be taken to reduce storm water pollution. The Public Education and Outreach Program shall (1) measurably increase the public's knowledge regarding the storm drain system, impacts of urban runoff and non-storm water discharges on receiving waters, and potential BMP solutions for the target audiences.

(ii) **Implementation Level** –The Permittee shall, at a minimum:

(a) Within the second year of the effective date of the permit, the Permittee shall develop and implement a public education strategy that establishes education tasks based on water quality problems, target audiences, and anticipated task effectiveness. The strategy must include identification of who is responsible for implementing specific tasks, a schedule for task implementation. The strategy must demonstrate how specific high priority storm water quality issues in their jurisdiction or local pollutants of concern are addressed.

(b) Implement BMPs that gauge level of awareness in target audiences and effectiveness of education tasks.

(c) Develop and convey of a specific storm water message that focuses on the following:
  (1) Local pollutants of concern
  (2) Target audience
  (3) Regional water quality issues

(d) Develop and disseminate appropriate educational materials in multiple languages when appropriate (e.g. the materials can utilize various media such as printed materials, billboard and mass transit advertisements, signage at select locations, stenciling at storm drain inlets, radio advertisements, television advertisements, and websites);

(e) Distribute educational materials, using whichever methods and procedures determined appropriate during development of the public education strategy;

(f) Develop and convey messages to explain the benefits of water-efficient landscaping (if appropriate);

(g) Utilize information from storm water-friendly landscaping[24] programs (if appropriate);

(h) Develop and convey messages specific to reducing illicit discharges with information about how the public can report incidents to the appropriate authorities;

(i) Develop and convey of messages specific to proper application of pesticides, herbicides, and fertilizers;

(j) If applicable, storm water education for school-age children. The Permittee may use California's Education and Environment Initiative Curriculum[25] or equivalent.

(k) Reduce discharges from pressure washing operations and landscape irrigation.

(l) If applicable, utilize storm water-friendly education for organized car wash participants and provide information pertaining to car wash discharge reduction. The Permittee may use the Sacramento Stormwater Quality Partnership's River Friendly Carwash Program[26], or equivalent, for guidance.

(m) The Permittee shall conduct focused education in identified illicit discharge flow areas based on identified illicit discharge(s).

(iii) **Reporting** – By the third year Annual Report and annually thereafter, complete and have available information on the public education strategy and general program development and progress. By the fifth year Annual Report, summarize changes in public awareness and knowledge resulting from the implementation of the program and any modifications to the public education and outreach program. If applicable, complete and have available a report on development of

[24] For example, Surfrider's Ocean Friendly Garden Program (http://www.surfrider.org/programs/entry/ocean-friendly-gardens)
[25] http://www.californiaeei.org/
[26] http://www.beriverfriendly.net/riverfriendlycarwashing/

education materials, methods for educational material distribution, public input, Water Efficient Landscape Ordinance, elementary school education, reduction of discharges from mobile cleaning and pressure washing operations, and landscape irrigation efforts. Complete and have available an annual report of the number of trainings and the study and results to date.

F.5.b.3. Staff and Site Operator Training and Education

Illicit Discharge Detection and Elimination Training

(i) **Task Description** – Permittees shall develop and implement a training program for all Permittee staff, who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illicit connection to the storm drain system.

(ii) **Implementation Level** – Within the third year of the effective date of the permit, the Permittee shall develop the training program. The training program shall include at a minimum:

(a) Identification of an illicit discharge or connection.
(b) Proper procedures for reporting and responding to the illicit discharge or connection.
(c) Follow-up training provided as needed to address changes in procedures, techniques, or staffing.
(d) Annual assessment of their trained staff's knowledge of illicit discharge response and shall provide refresher training as needed.
(e) Training of new staff who, as part of their normal job responsibilities may be notified of, come into contact with, or otherwise observe an illicit discharge or illicit connection.
(f) Contact information, including the procedure for reporting an illicit discharge, shall be included in each of the Permittee's fleet vehicles that are used by field staff.

(iii) **Reporting** - The Permittee shall document and maintain records of the training provided and the staff trained annually.

F.5.b.4. Staff Pollution Prevention and Good Housekeeping

The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations.

(i) **Task Description** – The Permittee shall provide an annual training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices in the Pollution Prevention/Good Housekeeping for Permittee Operations sections of this General Permit.

(ii) **Implementation Level** – The annual training program shall include the following:

(a) General storm water education component, any new technologies, operations, or responsibilities that arise during the year, and the permit requirements that apply to the staff being trained. Clear guidance on appropriate storm water BMPs to use at Permittee owned facilities and during typical Operation and Maintenance activities.

(b) An assessment of trained staff's knowledge of pollution prevention and good housekeeping and shall revise the training as needed.

(c) A requirement that any contractors hired by the Permittee to perform Operation and Maintenance activities shall be contractually required to comply with all of the storm water BMPs, good housekeeping practices, and standard operating procedures described above.

The Permittee shall provide oversight of contractor activities to ensure that contractors are using appropriate BMPs, good housekeeping practices and following standard operating procedures.

(iii) **Reporting –** By the second year Annual Report and annually thereafter, complete and have available a summary of oversight procedures and identify and track all personnel requiring training and assessment and records.

F.5.c. PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

(i) **Task Description -** The Permittee shall involve it's public in the planning and implementation of activities related to the development and implementation of the program. The public participation and involvement program shall encourage volunteerism, public comment and input on policy, and activism in the community.

(ii) **Implementation Level** – Within the third year of the effective date of the permit, the Permittee shall, at a minimum:

(a) ensure that high foot traffic storm drain inlets include a labeled or stenciled storm water awareness message such as "drains to creek" or "only rain in the drain"
(b) integrate storm water awareness messages and information on a publicly accessible website

(iii) **Reporting –** By the third year Annual Report and annually thereafter, complete and have available a description of the public involvement program and summary of the MS4s efforts related to facilitating public involvement.

F.5.d. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The Permittee shall develop an Illicit Discharge Detection and Elimination program to detect, investigate, and eliminate non-storm water discharges, including illegal dumping, into its system.

Outfall Mapping

(i) **Task Description** - The Permittee shall maintain an up-to-date and accurate outfall map. The map may be in hard copy and/or electronic form or within a geographic information system (GIS). The Permittee shall conduct outfall mapping during the dry season[27].

(ii) **Implementation Level** - The outfall map shall at a minimum show:

(a) The location of all outfalls and drainage areas contributing to those outfalls that are operated by the Permittee, and that discharge within the Permittee's jurisdiction to a receiving water
(b) The location (and name, where known to the Permittee) of all water bodies receiving discharges from those outfall pipes. Each mapped outfall shall be given an individual alphanumeric identifier, which shall be noted on the map. Photographs shall be taken to provide baseline information and track operation and maintenance needs over time.

(iii) **Reporting** –By second year Annual Report complete and have available map.

[27] The dry season is defined as May – September.

F.5.d.1.Field Sampling to Detect Illicit Discharges

(i) **Task Description** – While conducting the outfall inventory under Section B.4.a, the Permittee shall sample any outfalls that are flowing.

(ii) **Implementation Level** – The Permittee shall:

(a) Conduct monitoring for the following indicator parameters to help determine the source of the illicit discharge

Indicator Parameters Used to Detect Illicit Discharges

Parameter	Discharge Types It Can Detect				
	Sewage	Washwater	Tap Water	Industrial or Commercial Liquid Wastes	Laboratory/Analytical Challenges
Ammonia	●	◉	○	◉	Can change into other nitrogen forms as the flow travels to the outfall
Color	◉	◉	○	◉	
Conductivity	◉	◉	○	◉	Ineffective in saline waters
Detergents – Surfactants	●	●	○	◉	Reagent is a hazardous waste
Fluoride*	○	○	●	◉	Reagent is a hazardous waste Exception for communities that do not fluoridate their tap water
Hardness	◉	◉	◉	◉	
pH	○	◉	○	◉	
Potassium	◉	○	○	●	May need to use two separate analytical techniques, depending on the concentration
Turbidity	◉	◉	○	◉	

● Can almost always (>80% of samples) distinguish this discharge from clean flow types (e.g., tap water or natural water). For tap water, can distinguish from natural water.
◉ Can sometimes (>50% of samples) distinguish this discharge from clean flow types depending on regional characteristics, or can be helpful in combination with another parameter
○ Poor indicator. Cannot reliably detect illicit discharges, or cannot detect tap water
N/A: Data are not available to assess the utility of this parameter for this purpose.
Data sources: Pitt (this study)
*Fluoride is a poor indicator when used as a single parameter, but when combined with additional parameters (such as detergents, ammonia and potassium), it can almost always distinguish between sewage and wash water.

(b) Verify that indicator parameters with the following action level concentrations are not exceeded.

Action level concentrations for Indicator Parameters

Indicator Parameter	Action Level Concentration
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 µS/cm
Hardness	<= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3
pH	<= 5 or >=9
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

(c) Identify areas of potential follow up actions (e.g. outfall monitoring "up-pipe" of the discharge) if the action level concentrations are exceeded.

(iii) **Reporting** – By second year Annual Report, complete and have available a report summarizing the field investigation results and areas of follow up actions. The report shall summarize all applicable observations.

F.5.d.2. Illicit Discharge Detection and Elimination Source Investigations and Corrective Actions

(i) **Task Description** - The Permittee shall develop written procedures for conducting investigations into the source of all identified prohibited non-storm water discharges, including approaches to requiring such discharges to be eliminated, and procedures to implement corrective actions (e.g., BMPs). These procedures shall be included as part of the Illicit Discharge Detection and Elimination program.

(ii) **Implementation Level -** At a minimum, the Permittee shall conduct an investigation(s) to identify and locate the source of any prohibited non-storm water discharge within 72 hours of becoming aware of the prohibited non-storm water discharge.

(a) Non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.

(b) Investigations of non-storm water discharges suspected of being cooling water, wash water, or natural flows may be delayed until after all suspected sanitary sewage and/or significantly contaminated discharges have been investigated, eliminated and/or resolved.

(c) Report immediately the occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to local Health Department.

(d) Determine and document through its investigations the source of all non-storm water discharges. If the source of the non-storm water discharge is found to be a discharge authorized under the General Permit, no further action is required.

(e) Corrective Action to Eliminate Non-Storm Water Discharge – Once the source of the non-storm water discharge has been determined, the Permittee shall immediately notify the responsible party of the problem.

(iii) **Reporting** – Complete and have available annually, all source investigations and corrective actions. At a minimum the report shall include:

(a) Date(s) the non-storm water discharge was observed;

(b) Results of the investigation;

(c) Date the investigation was closed.

(d) A summary of all non-storm water discharges that were found.

F.5.e. CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

The Permittee shall develop, implement, and enforce a program to prevent Construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The program shall include the development of contract language ensuring the Permittee's in-house construction operators or outside contractors comply with the CGP.

(i) **Task Description -** Each Permittee shall develop and implement contract language ensuring all outside contractors comply with the CGP and implement appropriate BMPs. Contract language shall apply to all projects that result in a total land disturbance of either one acre or more or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale.

(ii) **Implementation Level** – Within the first year of the effective date of the permit, the Permittee shall include CGP compliance requirements in construction contract language for all project one acre or more projects or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale.

(iii) **Reporting –** By the second year Annual Report, the Permittee shall complete and have available updated contract language that includes CGP compliance requirements for all projects subject to the CGP.

F.5.f. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM

The Permittee shall develop and implement a program to prevent or reduce the amount of pollutant runoff from Permittee operations. The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations. Permittee shall implement appropriate BMPs for preventing or reducing the amount of storm water pollution generated by Permittee operations.

F.5.f.1.Inventory of Permittee-Owned or Operated Facilities

(i) **Task Description** - Prepare an inventory of Permittee-owned or operated facilities within their jurisdiction that are a threat to water quality.

(ii) **Implementation Level** - Within the second year of the effective date of the permit, the Permittee shall develop and maintain an the inventory that shall include facilities that may impact storm water.

(iii) **Reporting** – By the second year Annual Report and annually thereafter complete and have available an updated inventory.

F.5.f.2. Map of Permittee-Owned or Operated Facilities

(i) **Task Description –**Prepare and submit a map of the urban area covered by the MS4 permit and identify where the Permittee-owned or operated facilities are located.

(ii) **Implementation Level** - Within the second year of the effective date of the permit, the Permittee shall complete and have available a map that identifies the storm water drainage system corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The map shall also show the facility and the manager of each facility, including contact information.

(i) **Reporting** - By the second year Annual Report and annually thereafter, complete and have available the map.

F.5.f.3. Facility Assessment

(i) **Task Description** –Conduct an inspection and assessment of pollutant discharge potential and pollutant hotspots.

(ii) **Implementation Levels** - Within the third year of the effective date of the permit, the Permittee shall conduct an annual review and assessment of all owned or operated facilities to determine their potential to impact surface waters. The assessment shall include the following:

(a) Identification of pollutant hotspots based on the assessment, the Permittee shall identify as pollutant hotspots those facilities that have a high potential to generate storm water and non-storm water pollutants. Among the factors to be considered are the type and volume of

pollutants stored at the site, the presence of improperly stored materials, activities that should not be performed outside (e.g., changing automotive fluids, vehicle washing), proximity to water bodies, poor housekeeping practices, and the discharge of pollutant(s) of concern to receiving water(s). Pollutant hotspots shall include, at a minimum, the Permittee's maintenance yards, hazardous waste facilities, fuel storage locations, and any other facilities at which chemicals or other materials have a high potential to be discharged in storm water.

(b) Documentation of the assessment procedures and results. The Permittee shall document the procedures it uses for conducting the assessment along with a copy of any site evaluation checklists used to conduct the assessment.

(iii) **Reporting** – By the third year Annual Report, complete and have available the results of the Permittee's annual assessment, any identified deficiencies and corrective actions taken, list of the pollutant hotspots.

F.5.f.4. Storm Water Pollution Prevention Plans

(i) **Task Description** – the Permittee shall develop and implement SWPPPs for pollutant hotspots at high priority sites. If a Permittee has an existing or equivalent document such as Hazardous Materials Business Plan or Spill Prevention Plan, the Permittee is not required to develop a SWPPP if that document includes the necessary information required within a SWPPP.

(ii) **Implementation Level** – Within the fourth year of the effective date of this permit, the Permittee shall implement the following:

(a) The Permittee shall develop and implement a site-specific SWPPP that identifies a set of storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants in storm water.

(b) The SWPPP(s) shall be kept on-site at each of the Permittee-owned or operated facilities' offices for which it was completed. The SWPPP shall be updated as necessary.

(c) At a minimum the SWPPP will address the following:

1) Facility specific information (location, owner, address, etc.)
2) Purpose of the document
3) Key staff/contacts at the facility
4) Site map with drainage identified
5) Identification of significant materials that are handled and stored at the facility that may be exposed to storm water
6) Description of potential pollutant sources
7) BMPs employed at facility
8) Spill control and cleanup – response to spills

(iii) **Reporting** – By the fourth year Annual Report and annually thereafter, complete and have available a summary of SWPPPs developed and updated for pollutant hotspots.

F.5.f.5. Inspections, Visual Monitoring and Remedial Action

(i) **Task Description** –The Permittee shall conduct regular inspections of Permittee-owned and operated facilities. The Permittee may incorporate storm water inspections into existing, routine facility inspections.

(ii) **Implementation Level** – Within the fifth year of the effective date of the permit, the Permittee shall conduct inspections as follows:

a) Quarterly hotspot visual inspections – Perform quarterly visual inspections in accordance with the developed standing operating procedures of all hotspot Permittee-owned or operated facilities to ensure materials and equipment are clean and orderly, to minimize the potential for pollutant discharge, and to ensure implementation of BMPs. The Permittee shall look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The quarterly inspections shall be tracked in a log for every facility, and records kept with the SWPPP. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

b) Quarterly Hotspot comprehensive inspections – At least once per quarter, a comprehensive inspection of hotspot facilities, including all storm water BMPs, shall be performed, with specific attention paid to the following, but not limited to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar potential pollutant-generating areas. The quarterly inspection results shall be documented and records kept with the SWPPP. This inspection shall be performed in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct deficiencies.

c) Quarterly Hotspot visual observation of storm water and non-storm water discharges – At least once per quarter, visually observe discharge location from hotspot facilities. Where discharges are observed identify any observed problems (e.g., color, foam, sheen, turbidity) associated with pollutant sources or BMPs shall be remedied within seven days or before the next storm event, whichever is sooner. Visual observations shall be documented, and records kept with the SWPPP. This inspection shall be done in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

d) Non-Hotspot Inspection – At a minimum, inspect each inventoried facility that is not a hotspot, once per permit term. The inspection shall investigate and assess each of the items identified above.

(iii) **Reporting** – By the fifth year Annual Report and annually thereafter, the following information shall be completed and made available:

(a) Total number of facilities required to be inspected.
(b) Total number of facilities inspected (visual and comprehensive inspections) and frequency of inspections
(c) Summary of spills and corrective actions
(d) Results of the quarterly visual observations of storm water discharges

F.5.f.6 Storm Drain System Assessment and Prioritization

(i) **Task Description** –The Permittee shall develop and implement procedures to assess and prioritize the MS4 storm drain system, including but not limited to catch basins, pipe and pump infrastructure, above-ground conveyances, including receiving waterbodies within the Permittee's urbanized area and detention basins.

(ii) **Implementation Level** – Within the second year of the effective date of the permit, the Permittee shall

(a) Assess/prioritize catch basins– Assign a priority to all catch basins within the Permittee's urbanized areas as consistently generating high, medium, and low volumes of trash and/or debris.

(iii) **Reporting** – By the second year Annual Report, complete and have available procedures and prioritization list.

F.5.f.7 Maintenance of Storm Drain System

(i) **Task Description** –The Permittee shall begin maintenance of all high priority storm drain systems at least annually prior to the rainy season.

(ii) **Implementation Level** – Within the third year of the effective date of the permit, the Permittee shall begin a maintenance program of high priority storm drain systems that, at a minimum includes:

(a) Storm drain systems inspection – Based on the priorities assigned above, develop a strategy to inspect storm drain systems within the Permittee's jurisdiction. At a minimum, inspect all catch basins of high priority systems annually, prior to the rainy season.

(b) Storm drain cleaning – Develop and implement a schedule to clean high priority catch basins and other systems. Cleaning frequencies shall be based on priority areas, with higher priority areas receiving more frequent maintenance.

(c) Maintenance of surface drainage structures –Visually monitor all Permittee-owned open channels, detention basins, and other drainage structures for debris at least once per year and identify and prioritize problem areas. At a minimum, removal of trash and debris from open channels and other drainage structures shall occur annually.

(e) Disposal of waste materials - Develop a procedure to dewater and dispose of materials extracted from catch basins. This procedure shall ensure that water

removed during the catch basin cleaning process and waste material will not reenter the MS4.

(iii) **Reporting** – By the third year Annual Report, complete and have available a summary of the following information:

(a) Storm sewer maintenance schedule

(b) List of storm sewer systems and the priority assigned

(c) Documentation of all required storm sewer systems maintenance logs

(d) Documentation of waste material disposal procedure

F.5.f.8.Permittee Operations and Maintenance Activities (O&M)

(i) **Task Description –**The Permittee shall assess their O&M activities for potential to discharge pollutants in storm water and inspect all BMPs on a quarterly basis.

(ii) **Implementation Level** - Within the third year of the effective date of the permit, the Permittee shall:

(a) Develop and implement O&M activity assessment. The O&M activities assessment shall include, but not be limited to, the potential to discharge pollutants in storm water:

(b) Identify all materials that could be discharged from each of these O&M activities.

(c) Develop and implement a set of BMPs that, when applied during Permittee O&M activities, will reduce the discharge of pollutants in storm water. The Permittee shall use the CASQA Municipal Handbook or equivalent.

(d) Evaluate annually all BMPs implemented during O&M activities

(iii) **Reporting** – By the third year Annual Report, complete and have available the following:

(a) List of BMPs and associated pollutants with each O&M activity

(b) BMPs applied during Permittee O&M activities

(c) Log of annual BMP evaluations.

(d) Documentation of high priority designated facilities maintained.

F.5.f.9 Pesticide, Herbicide, and Fertilizer Application and New Landscape Design and Maintenance Management

(i) **Task Description** –The Permittee shall implement a program which focuses on pollution prevention, source control BMPs, and landscape design and maintenance to reduce the amount of pesticides, herbicides and fertilizers used during their Permittee operations and activities. The Permittee shall implement the landscape design and maintenance on new or decorative landscapes.

(ii) **Implementation Tasks** – Within the second year of the effective date of the permit, the Permittee shall implement the following:

(a) Evaluate pesticides, herbicides and fertilizers used and application activities performed to identify pollution prevention and source control opportunities.

(b) Implement practices that reduce the discharge of pesticides, herbicides and fertilizers (based upon B.6.i(ii)(a)). At a minimum the Permittee shall do the following, but not limited to:

(1) Educate applicators and distributors of storm water issues.

(2) Implement integrated pest management measures that rely on non-chemical solutions, including:

a) Use of native and climate appropriate plants (reduces water usage and fertilization) for decorative landscape applications

b) Keeping clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling

c) Preventing application of pesticides and fertilizers when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[28]

d) Limiting or replacing herbicide and pesticide use (e.g., conducting manual weed and insect removal)

e) Limiting or eliminating the use of fertilizers, including prohibiting application within five feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a water body

f) Reducing mowing of grass to allow for greater pollutant removal, but not jeopardizing public safety

(3) Collect and properly dispose of unused pesticides, herbicides, and fertilizers.

(4) Minimize irrigation run-off

(iii) **Reporting** - By the second year Annual Report, complete and have available an evaluation of materials used and activities performed for pollution prevention and source control opportunities and a list of practices implemented to minimize the use

[28] www.srh.noaa.gov/forecast

of herbicide, pesticide, and fertilizers. By the second year Annual Report, complete and have available a document identifying the measures that the Permittee will use to demonstrate reductions in the application of pesticides, herbicides, and fertilizers. In subsequent annual reports, use this measure to demonstrate reductions in pesticide, herbicide, and fertilizer application.

F.5.g. POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM

Post-Construction Treatment Measures

All Permittees shall implement post-construction treatment measures for new and redevelopment projects and comply with the following Sections below:

- Site Design Measures
- Low Impact Development Runoff Standards
- Implementation Strategy for Watershed Process Management
- Operation and Maintenance of Post Construction Storm Water Management Measures

Reporting – By the third year Annual Report, all Permittees shall complete and have available an inventory of projects subject to post-construction treatment measures for new and redevelopment projects.

Hydromodification Measures

All Permittees shall implement post-construction hydromodification measures and comply with the following Sections below:

- Hydromodification Management [29]
- Operation and Maintenance of Post Construction Storm Water Management Measures

Reporting -

1. Permittees located within a Phase I MS4 permit boundary with a Regional Water Board approved Hydromodification Plan shall complete and have available a summary report in the year one Annual Report describing the strategies to implement and coordinate with the surrounding Phase I MS4 Permittee Hydromodification Plan. In subsequent Annual Reports, the Permittee shall complete and have available an inventory of projects subject to the surrounding Phase I MS4 Hydromodification Plan requirements.

[29] Permittees located within a Phase I MS4 permit boundary with a Regional Water Board approved Hydromodification Plan shall implement the Hydromodification Plan requirements for region-wide hydromodification consistency. The Permittee shall develop a summary report describing the strategies to implement and coordinate with the outlying Phase I MS4 Permittee Hydromodification Plan.

2. By the third year Annual Report, Permittees located within a Phase I MS4 permit boundary without a Regional Water Board approved Hydromodification Plan or where a plan does not exist shall have available an inventory of the projects subject to this Section.

3. By the third year Annual Report, Permittees not located within a Phase I MS4 permit boundary area shall have available an inventory of the projects subject to this Section.

F.5.g.1. Site Design Measures

(i) **Task Description** – The Permittee shall implement site design measures for all projects that create and/or replace (no net increase in impervious footprint) 2,500 square feet or more of impervious surface, including detached single family homes that are not part of a larger plan of development.

(ii) **Implementation Level** - Within the first year of the effective of the permit, the Permittee shall implement the following site design measures for all projects that create and/or replace 2,500 square feet or more of impervious surface, including detached single family homes that are not part of a larger plan of development. The Permittee may implement one or a combination of the following site design measures to reduce project site runoff to the maximum extent technically feasible:

(a) Stream Setbacks and Buffers
(b) Soil Quality Improvement and Maintenance
(c) Tree planting and preservation
(d) Rooftop and Impervious Area Disconnection
(e) Porous Pavement
(f) Downspout Disconnection
(g) Green Roofs
(h) Vegetated Swales
(i) Rain Barrels and Cisterns

F.5.g.2. Low Impact Development Runoff Standards

(i) **Task Description** – The Permittee shall implement low impact development standards to effectively reduce runoff from projects that create and/or replace 5,000 square feet or more of impervious surface.

(ii) **Implementation Level** - The Permittee shall adopt and implement requirements and standards to ensure design and construction of development projects achieve LID objectives for runoff reduction, storm water treatment, and baseline hydromodification management. The Permittee shall require projects to provide a map or diagram dividing the entire project site into discrete Drainage Management Areas (DMAs), and to

account for the drainage from each DMA. The Permittees shall (1) implement source controls and site design measures to the extent technically feasible to reduce the amount of runoff and (2) any remaining runoff from impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or biotreat runoff.

(1) **Source Control Requirements** – The following standard permanent and/or operational source control BMPs shall be adopted and implemented to address the following pollutant sources, as applicable:

(a) Accidental and illicit discharges to on-site storm drain inlets.
(b) Interior floor drains and elevator shaft sump pumps
(c) Interior parking garages
(d) Indoor and structural pest control
(e) Landscape/outdoor pesticide use
(f) Pools, spas, ponds, decorative fountains, and other water features
(g) Restaurants, grocery stores, and other food service operations
(h) Refuse areas
(i) Industrial processes
(j) Outdoor storage of equipment or materials
(k) Vehicle and equipment cleaning
(l) Vehicle and equipment repair and maintenance
(m) Fuel dispensing areas
(n) Loading docks
(o) Fire sprinkler test water
(p) Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources

(2) **Site Design Measures** - The following site design measures shall be used to reduce the amount of runoff, to the extent technically feasible, for which retention and treatment is required. The methods are based on the objective of achieving infiltration, evapotranspiration and/or harvesting/reuse of the 85th percentile rainfall event.

(a) Stream Setbacks and Buffers
(b) Soil Quality Improvement and Maintenance
(c) Tree planting and preservation
(d) Rooftop and Impervious Area Disconnection
(e) Porous Pavement
(f) Downspout Disconnection
(g) Green Roofs
(h) Vegetated Swales
(i) Rain Barrels and Cisterns

(3) **Storm Water Treatment Measures and Baseline Hydromodification Management Measures -** Runoff from remaining impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or biotreat the amount of runoff specified in below.

The facilities must be demonstrated to be at least as effective as a bioretention system with the following design parameters.

- Maximum surface loading rate of 5 inches per hour, based on the flow rates calculated. A sizing factor of 4% of tributary impervious area may be used.
- Minimum surface reservoir volume equal to surface area times a depth of 6 inches.
- Minimum planting medium depth of 18 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used.
- Subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.
- Underdrain with discharge elevation at top of gravel layer.
- No compaction of soils beneath the facility, or ripping/loosening of soils if compacted.
- No liners or other barriers interfering with infiltration.
- Appropriate plant palette for the specified soil mix and maximum available water use.

a) **Alternative Designs —** Facilities of a different design than in (2) may be permitted if the following measures of equivalent effectiveness are demonstrated:

1. Equal or greater amount of runoff infiltrated or evapotranspired

2. Equal or lower pollutant concentrations in runoff that is discharged after biotreatment

3. Equal or greater protection against shock loadings and spills

4. Equal or greater accessibility and ease of inspection and maintenance

b) **Allowed Variations for Special Site Conditions** - The bioretention criteria in (2) may be adjusted for special site conditions as follows:

1. Facilities located within 10 feet of structures may incorporate an impermeable cutoff wall between the facility and the structure.

2. Facilities with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may

incorporate an impermeable liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a “flow-through planter”).

3. Facilities located in areas of high groundwater, or where connection of underdrain to a surface drain or to a subsurface storm drain are infeasible, may omit the underdrain.

c) **Exceptions to Requirements for LID Facilities** - Contingent on a demonstration that use of bioretention or a facility of equivalent effectiveness is infeasible, tree-box-type biofilters or in-vault media filters may be used for the following:

1. Projects creating or replacing an acre or less of impervious area, and located in a designated pedestrian-oriented commercial district, and having at least 85% of the entire project site covered by permanent structures;

2. Facilities receiving runoff solely from existing (pre-project) impervious areas,

3. Smart growth credits

Tree-box-type biofilters and in-vault media filters shall meet the requirements of the above requirements. Within the second year of the effective date of the permit, each permittee shall adopt or reference appropriate performance criteria for tree-box-type biofilters and in-vault media filters.

Reopener for LID requirements - The Executive Director of the State Water Board may evaluate newly available technical data and other information regarding the effectiveness of source control, runoff reduction, stormwater treatment, and baseline hydrograph modification management measures and may propose to the State Water Board revisions to these criteria as needed to ensure the measures and facilities installed under this Permit minimize pollutant loadings and hydromodification impacts.

d) **Numeric Sizing Criteria for Storm Water Retention and Treatment**

The Permittees shall require facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the following hydraulic sizing design criteria:

(1) Volumetric Criteria

a. The maximized capture storm water volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, approximately the 85th percentile 24-hour storm runoff event); or

b. The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology in Section 5 of the California Stormwater Quality Association's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) Flow-based Criteria

a. The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

b. The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

(iii) **Reporting** – For each project approved, the following information shall be completed and be available annually in the Annual Report:

(a) Project Name, Number, Location (cross streets), and Street Address;
(b) Name of Developer, Phase No. (if project is being constructed in phases, each phase shall have a separate entry), Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description;
(c) Project watershed(s);
(d) Total project site area and total area of land disturbed;
(e) Total new impervious surface area and/or total replaced impervious surface area;
(f) If a redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;
(g) Status of project (e.g., application date, application deemed complete date, project approval date);
(h) Source control measures;
(i) Site design measures;
(j) All post-construction storm water treatment systems installed onsite, at a joint storm water treatment facility, and/or at an offsite location;
(k) O&M responsibility mechanism for the life of the project.
(l) Water quality treatment calculations used;
(m) Off-site compliance measures (if applicable)
(n) Additional (watershed-specific) hydromodification standards used

F.5.g.3. Hydromodification Management

(i) **Task Description** – The Permittee shall develop and implement Hydromodification Management procedures. Hydromodification management projects are projects that create and/or replace one acre or more of impervious surface. A project that does not increase impervious surface area over the pre-project condition is not a hydromodification management project.

(ii) **Implementation Level** - Within the third year of the effective date of the permit, the Permittee shall implement the following Hydromodification Standard:

(a) Post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Coast Ranges
- Klamath Mountains
- Cascade Range
- Modoc Plateau
- Basin and Range
- Sierra Nevada
- Great Valley

(b) Post-project runoff shall not exceed estimated pre-project flow rate for the 5-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Transverse Ranges
- Peninsular Ranges
- Mojave Desert
- Colorado Desert

Figure 1. California Geomorphic Provinces

(iii) **Reporting –** By the third year annual report, complete and have available verification that the Hydromodification Management procedures are being implemented.

F.5.g.4. Operation and Maintenance (O&M) of Post-Construction Storm Water Management Measures

(i) **Task Description** –Within the second year of the effective date of the permit, the Permittee shall implement an O&M Verification Program for new development projects regulated under this Order

(ii) **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:

(a) Projects shall at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

(1) The project proponent's signed statement accepting responsibility for the O&M of the installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

(2) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

(3) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed treatment system(s) and hydromodification control(s) (if any) to the project owner(s) or the Permittee.

(b) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed treatment systems and hydromodification management controls.

(c) A database or equivalent tabular format of all projects that have installed treatment systems. This database or equivalent tabular format shall include the following information for each project:

(1) Name and address of the project;
(2) Specific description of the location (or a map showing the location) of the installed treatment system(s) and hydromodification control(s) (if any);
(3) Date(s) that the treatment system(s) and hydromodification controls (if any) is/are installed;
(4) Description of the type and size of the treatment system(s) and hydromodification control(s) (if any) installed;
(5) Responsible operator(s) of each treatment system and hydromodification control (if any);
(6) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and hydromodification control(s) (if any) by the Permittee; and
(7) Any problems and corrective or enforcement actions taken.

(f) Maintenance Approvals: The Permittee shall ensure that systems and hydromodification controls installed at projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a treatment system or hydromodification control has worked diligently and in good faith with the appropriate State and federal agencies and the Permittee to obtain approvals necessary to complete maintenance activities

for the treatment system or hydromodification management control, but these approvals are not granted, the Permittee shall be deemed to be in compliance with this Provision.

(iii) **Reporting -**

(a) For each project inspected during the reporting period (fiscal year) the following information shall be complete and made available in tabular form as part of each year's Annual Report:

(1) Name of facility/site inspected.
(2) Location (street address) of facility/site inspected.
(3) Name of responsible operator for installed storm water treatment systems and hydromodification management controls.
(4) Inspection details including: Date of inspection, type of inspection (e.g., initial, annual, follow-up, spot), type(s) of storm water treatment systems inspected (e.g., swale, bioretention unit, tree well, etc.) and an indication of whether the treatment system is an onsite, joint, or offsite system.
(5) Type of hydromodification management controls inspected.
(6) Inspection findings or results (e.g., proper installation, proper O&M, system not operating properly because of plugging, bypass of storm water because of improper installation, maintenance required immediately, etc.).
(7) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order).

(b) On an annual basis, before the wet season, prepare a list of newly installed (installed within the reporting period) storm water treatment systems and hydromodification management controls to the local mosquito and vector control agency and the appropriate Regional Water Board. This list shall include the facility locations and a description of the storm water treatment measures and hydromodification management controls installed.

(c) Each Permittee shall complete and have available the following information in the Annual Report:

(1) A discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or hydromodification management controls. This discussion shall include a general comparison to the inspection findings from the previous year.

(2) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

F.5.h. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT

F.5.h.1. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT PLAN

(i) **Task Description -** The Permittee shall develop and implement a Program Effectiveness Assessment and Improvement Plan that tracks short and long-term progress of the storm water program. The Program Effectiveness Assessment and Improvement Plan will assist the Permittee to adaptively manage its storm water program and make necessary modifications to the program to improve program effectiveness, achieve the MEP standard, and protect water quality, and to document the Permittee's compliance with permit conditions. The Program Effectiveness Assessment and Improvement Plan shall identify the strategy used to gauge the effectiveness of each BMP and program implementation as a whole. The effectiveness assessments will build upon each other from one year to the next and shall identify modifications to the program the Permittee must undertake to improve effectiveness.

(ii) **Implementation Level** - The Program Effectiveness Assessment and Improvement Plan may be modeled upon the most recent version (if applicable) Municipal Storm Water Program Effectiveness Assessment Guidance (CASQA, May 2007) or equivalent.

(a) The Program Effectiveness Assessment and Improvement Plan shall include the following minimum elements:

(1) Implementation of storm water program elements
(2) Identification and targeting of Target Audience(s)

F.5.h.2 Storm Water Program Modifications

(i) **Task Description** – Based on the information gained from the effectiveness assessment, the Permittee shall make modifications to control measures/significant activities, including new BMPs or modification to existing BMPs, as specified below. The Permittee shall consult with the Regional Water Board in setting expectations for the scope, timing, and frequency of BMP modifications.

(ii) **Implementation Level** –Within the fifth year of the effective date of the permit, the Permittee shall identify program modifications to include:

(a) Improving upon BMPs that did not accomplish goals;
(b) Continuing and expanding upon BMPs that proved to be effective, including identifying new BMPs or modifications to existing BMPs designed to increase pollutant load reductions;
(c) Discontinuing BMPs that may no longer be productive and replacing with more effective BMPs; and
(d) Shifting priorities to make more effective use of resources

(iii) **Reporting** – By the fourth year Annual Report complete and have available a summary of maintenance activities of highest priority BMPs. By the fifth year Annual Report, complete and have available a summary of completion of maintenance of high priority BMPs. Complete and have available annually any modifications to the storm water program to improve program effectiveness, to achieve the MEP standard, protect water quality.

F.5.I TOTAL MAXIMUM DAILY LOADS COMPLIANCE REQUIREMENTS

The Permittee shall comply with all applicable TMDLs approved pursuant to 40 CFR § 130.7 for which the Permittee has been assigned a Waste Load Allocation or that has been identified in Attachment G.

Waste Load Allocations (WLA), Load Allocations (LA), effluent limitations, implementation requirements, and monitoring requirements are specified in the adopted and approved Regional Water Board Basin Plans and authorizing resolutions which are incorporated herein by reference as enforceable parts of this General Permit. Applicable Basin Plan amendments and resolutions are identified in Attachment G. Attachment G additionally contains a list of TMDL-specific permit requirements developed by the Regional Boards for compliance with the implementation requirements of the relevant TMDLs. These requirements are an enforceable component of this Order. In some cases, dates are given that fall outside the term of this General Permit. Compliance dates that have already passed are enforceable on the effective date of this General Permit. Compliance dates that exceed the term of this General Permit are included for reference, and become enforceable in the event that this General Permit is administratively extended.

The Regional Water Boards are directed to review, within six months of the effective date of this Order, the TMDL-specific permit requirements contained in Attachment G and to propose to the State Water Board any appropriate revisions after consultation with the Permittees and State Water Board staff. Any proposed revisions by the Regional Water Boards shall be supported by an explanation of how the proposed TMDL-specific permit requirements are consistent with the assumptions and requirements of applicable WLAs and with the goals of the TMDL. The State Water Board will incorporate any necessary revisions through a reopener. The State Water Board may additionally revise this General Permit through a

reopener to incorporate any modifications or revisions to the TMDLs in Attachment G, or to incorporate any new TMDLs adopted during the term of this General Permit that assign a WLA to the Permittee or that identify the Permittee as a responsible party. In revising Attachment G, the State Water Board will allow adequate notice and public review.

The Permittee shall complete and have available a report that includes the status of their implementation of the specific TMDL implementation requirements that have been incorporated into the General Permit with each Annual Report. The TMDL implementation report shall include the following information:

1. A description of BMPs implemented, including types, number, and locations

2. An assessment of the effectiveness of implemented BMPs in progressing towards attainment of wasteload allocations within the TMDLs' specified timeframes

3. All monitoring data, including a statistical analysis of the data to assess progress towards attainment of wasteload allocations within the TMDLs' specified timeframes

4. Based on results of the effectiveness assessment and monitoring, a description of the additional BMPs that will be implemented to attain wasteload allocations within the TMDLs/ specified timeframes

The Permittee shall comply with implementation requirements specified in Category 4b demonstrations associated with Clean Water Act Sections 303d, 306b, and 314 Integrated Reporting and Listing Decisions. Implementation requirements described in Category 4b demonstrations are effective upon Regional Water Board approval of that region's Integrated Reporting and Listing Decisions and associated Category 4b demonstrations.

F.5.J ONLINE ANNUAL REPORTING PROGRAM

F.5.j.1. Department of Defense and Department of Corrections and Rehabilitation Permittees are exempt from Annual Reporting of any provision that could pose a security risk and compromise facility security. Any requested information to determine compliance with this Order [40 CFR 122.41(h)] by the Water Boards or U.S. EPA shall be furnished during normal business hours.

F.5.j.2. The Permittee shall certify State Water Board's SMARTS to certify in each online Annual Report they are in compliance with all requirements of the General Permit. If a Permittee is unable to certify compliance with a requirement, it must submit in the online Annual Report the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

F.5.j.3.Permittees shall complete and retain all Annual Report information on the previous fiscal year beginning July 1 and ending June 30. The Annual Reporting requirements are set forth in Provisions E. The Permittee shall retain documentation as necessary to support their Annual Report. The Permittee shall make this supporting information available during normal business hours, unless agreed to by the Regional Water Board's Executive Officer.

F.5.j.4. Permittees involved in regional programs shall coordinate with the members to identify reporting responsibility. SMARTS will accept only one report on behalf of Permittees involved in a regional program. The one report submitted on behalf of Permittees involved in a regional program must include full reporting and demonstration of compliance for each of the Permittees in the regional program.

G. REGIONAL WATER BOARD AUTHORITIES

Regional Water Boards are responsible for overseeing compliance with this General Permit. Oversight may include, but is not limited to, reviewing reports, requiring modification to storm water program components and various submissions, imposing region-specific monitoring requirements, conducting inspections and program evaluations (audits), taking enforcement actions against violators of this General Permit, and making additional designations of a Permittee per the criteria described in this General Permit and Fact Sheet. Permittees shall modify and implement their storm water management programs and monitoring as required by the Regional Water Board Executive Officer. The Regional Water Boards may also issue individual permits to Regulated Small MS4s, and alternative general permits to categories of Regulated Small MS4s. Upon issuance of such permits by a Regional Water Board, this General Permit shall no longer regulate the affected Small MS4(s).

H. PERMIT RE-OPENER

This Order may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations 122.62, 122.63, 122.64, and 124.5. The State Board may additionally reopen and modify this Order at any time prior to its expiration under any of the following circumstances:

1. Present or future investigations demonstrate that the discharge(s) regulated by this Order may have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses.

2. New or revised Water Quality Objectives come into effect, or any TMDL is adopted or revised that is applicable to the Permittees

3. TMDL-specific permit requirements for adopted TMDLs are developed or revised by a Regional Water Board for incorporation into this Order.

I. PERMIT EXPIRATION

This Order expires on (five year expiration date). If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 40 Code of Federal Regulations section 122.6 and remain in full force and effect. If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once it is issued.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of State Water Board held on_____.

_____
Jeanine Townsend
Clerk to the Board